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THE PRINCIPLES AND PROBLEMS OF PHILOSOPHY

BY

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PREFACE

Insight into situations and relations, rather than mere information, is the heart of philosophy. It follows that a good introduction to the subject must possess an inner momentum sufficient to carry the student from stage to stage of his intellectual and spiritual adventure. This quality is one that cannot be achieved by the mere cataloging of past positions.

Add to this need for vitality the difficulty due to the actual divergence in philosophical views, and it is not surprising that nearly all teachers of philosophy assert that a satisfactory introduction is still to seek. I do not wish to make exaggerated claims for the present work, but I have assuredly tried to make it a step in the right direction.

The Principles and Problems of Philosophy is partly a revision, partly a supplementation, of my earlier work, *The Essentials of Philosophy*. It still retains, I hope, the good features of that work while avoiding its shortcomings. It is my belief that the student who goes through the argument will at least have a *feel* for philosophy, that is, will have a sense for its problems, methods and aims. And this is by no means an unimportant attainment.

I would recommend that this introductory course be accompanied, or followed, by a semester's work in logic. A year's work in the history of philosophy, in addition, should give an excellent foundation.

In writing the present book, I have been guided by three principles: (1) It should not be superficial, (2) it should bring into relief problems and distinctions even to the point of technicality, and (3) it should follow the path of my

own ascent to the 'hill of vision.' A few words in justification of these principles may not be amiss.

Let me confess to pride in philosophy. I am persuaded that it has a subject-matter and an internal structure which need fear no comparison with the subject-matter and internal structure of any of the sciences. Persistent analysis throughout the ages has left its fruits behind. There is something definite for the student to learn, something for him to master by re-thinking what has been thought. Is it fair, then, to the student to ignore this structure and these distinctions and to offer in their place a not too exigent amount of information of a general sort, largely biographical? When physicist, chemist and mathematician adopt this method, I shall be ready to revise my procedure—but not until then. There is no royal road to philosophy any more than there is to geometry. A certain amount of grind and mental effort there must be. An introduction to philosophy cannot avoid technicalities; its task is to illuminate them. So much for my first two principles, which are but two aspects of the same theme.

At first glance, the third principle would seem to need more justification. But that, I think, is an illusion. When the personal touch is removed, philosophy tends to become lifeless and mechanical. It is something sustained by activity. It seems to me, then, an unavoidable condition of a stimulating book in philosophy that it grow out of the first-hand thinking of the author. That is why this introduction has followed so closely the path my own mind has taken these many years. Over this path I can act as a guide.

I hope this book will be taken as more than the conventional text. It is meant to be a contribution to philosophy as well. I have tried to clarify and push nearer to adequacy the theory of knowledge called critical realism. In the domain of cosmology I have continued the theory of levels, or gradients, in nature which I advocated in nineteen hundred and nine in an article on Causality published in the *Journal of Philosophy,* a theory which is now usually called emergent evolution.

Originality in all these things is, of course, very relative. By combining critical realism with the theory of levels, I have suggested a double-knowledge approach to the mind-body problem, which makes it possible to conceive mind and consciousness as intrinsic to the organism. There are, also, I hope, suggestions of importance in regard to the nature of valuation as against pure cognition.

May I register my belief that philosophy has made remarkable advances all along the line during the last quarter of a century. Linked with the special sciences, it may yet regain its once tremendous influence over men's lives. And it is here that I find myself most sympathetically in touch with pragmatism. Man is a creator of *objectives* in the medium of nature. Let him create with intelligence and fine discrimination.

In conclusion, I wish to thank those colleagues of mine in various colleges who have given me suggestions and encouragement. In these matters the old adage has held true once more. And I wish gratefully to acknowledge the help my wife has given me in seeing the book through the press. She has not only read proof and made suggestions but has also prepared the index.

ROY WOOD SELLARS.

Ann Arbor.

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PART ONE

INTRODUCTION, STUDIES IN THE HISTORY OF PHILOSOPHY, AND THEORY OF KNOWLEDGE

PRINCIPLES AND PROBLEMS OF PHILOSOPHY

CHAPTER I

WHAT PHILOSOPHY IS

A Preliminary Definition.—Although it is seldom a difficult matter to give a formal definition of a subject, it is a harder task to make this formal definition significant for anyone who is not familiar with the aims, methods, and problems which give it its setting and content. To understand a subject, it is necessary to live into it and become acquainted with its urgency. But while we must not expect very much immediate illumination from a definition it is desirable to offer at least a general indication of the kind of undertaking we are about to launch out upon. Perhaps the following will serve our purpose: *Philosophy is a persistent attempt to gain insight into the nature of the world and of ourselves by means of systematic reflection.* I have selected this definition from a large number because it stresses an important point. Philosophy is, first of all, an activity. It is a continuous seeking of insight into basic realities: the physical world, life, mind, society, knowledge, values.

This preliminary definition stresses the broadness of aim and interest characteristic of philosophy. It is an effort dominated by the thought of the whole fabric of existence, a search into fundamentals. We must bear in mind this breadth of interest because philosophy has likewise the need of making special investigations of its own in furtherance of this interest. Thus our subject is a collection of sciences, such as theory of knowledge, logic, cosmology, ethics and aesthetics,

as well as a unified survey. Yet while there are these divisions, it is equally true to say that none of them can be complete by itself. More than any other subject, perhaps, philosophy feels the interconnection of all fields. It tries to penetrate deeply and yet see the bearing of things upon one another.

Let us dwell for a moment upon this breadth of philosophy. It is, we said, a persistent reflection. Naturally it is a reflection upon all those basic problems which puzzle and fascinate the human mind. It deals with the purpose and meaning of life and even asks whether life has a meaning or purpose. All this is unavoidable. The human mind wants a philosophy of life, some interpretation of the setting and possibilities and fate of human beings. Again, reflection turns upon the world. What is the world made of? Was it created? What are its chief characteristics? Is life natural? Is a man a part of nature? There are so many things to reflect upon. Yet these things and problems seem to involve one another. They all form some sort of unity. Starting with human life, we come around to nature; and starting with nature, we come back to human life. It all hangs together in some fashion. Philosophy has always been convinced of this unity and interconnection. It has never been content to aim at less than the whole.

But while this comprehensiveness has always been, to some degree, a feature of philosophy, there have been times when one set of problems has engrossed it more than others. And it is true that some people are more profoundly interested in certain questions than in others. Thus, to many, an interpretation of human life is the theme of greatest significance, while others are equally interested in nature and in abstract questions of logic. We should note, too, that certain periods stressed ethics and religion, while other periods had a wider sweep of interest. In every case, however, some attention was paid to the total domain of reality, the sense of the whole was never completely absent.

Important as this preliminary definition of philosophy is, it is not sufficient. More is needed. What are some of the fundamental questions which arouse reflection? How does philosophy go about it to answer them? What are its methods? Has it succeeded in answering any of these basic questions? What is its relation to science? To religion?

All these are fair questions which we shall take up in the course of our study. It is obvious that we cannot give complete answers to them by means of a few brief statements. Just like any other subject, philosophy is something to be lived into until the spell of its problems and methods is felt. In a very true sense, one can understand philosophy only by learning to philosophize.

But while this is so, this fact does not absolve us from giving answers to the above questions. First of all, then, what are some of the fundamental problems which engage the attention of the philosopher? Well, in the philosophy of nature the following questions would be typical: Does the physical world have an existence of its own apart from any mind's knowledge of it? What is the exact nature of our knowledge of it? Can we penetrate to the "stuff" of which the world is made? Or do we know only the structure and behavior and development of things? What is life? Is there a break between the organic and the inorganic? What is mind? How is it related to the body? Rising to the philosophy of human life, we find such questions as the following: Are we free, or are we creatures of necessity? What should we mean by freedom? What should we mean by right and wrong? What principles ought to control human conduct? Finally, we can concern ourselves with those questions of man's destiny and the nature of the universe which have always been raised by religion. Is there a providence? Is ours a friendly universe? Is there a God with whom we can enter into relations? Is human life good or bad? Can we be optimists or must we be pessimists?

These are but a few of the many questions which philoso-

phers have raised. One question leads to another and starts others which were before unthought of. Ours is clearly a complex world which is not easily understood. And yet it is human nature to try to understand it. In fact, people have traditional answers to many of these questions, answers given by past thinkers. Even those who think that they are avoiding philosophy have their own philosophy. The fault with it is that it is largely a matter of accepted suggestion. Is it not the manly thing to bring it out into the open and think it over with the *help* of those who have devoted their lives to it? To-day traditional philosophy is no more acceptable than traditional medicine, traditional science or traditional politics.

We come now to the next question: How does philosophy go about it to answer these basic queries? What are its methods? The answer is simple and was contained in the definition. The method of philosophy is *systematic reflection.* In short, it has no peculiar tool or source. It does just what science does; it gathers information, analyzes concepts, compares, relates, organizes. A recent writer speaks of scientific method in philosophy. We shall have more to say about this point when we come to compare philosophy and science. We shall there see that there is division of labor, science doing more of the experimenting and of the detailed observation. The various sciences are invaluable helps to philosophy because they specialize in various fields. But philosophy, itself, is a persistent reflection upon these facts and concepts developed by the sciences. Also it adds sciences of its own when these are felt to be necessary for the solution of its problems. Psychology was such a science. So was ethics. *And even now logic and theory of knowledge are sciences maintained by philosophy as necessary elements in its systematic reflection upon the world and upon human life.*

Has philosophy succeeded in answering any of these basic questions? Has philosophy progressed? This is an impor-

tant question. I think that the philosopher has a right to give a decidedly affirmative answer. While there are schools in philosophy and while there is divergence of opinion on many crucial matters, it is correct to say that philosophy has to its credit analyses upon which all schools agree. Further than this, there is a certain common way of handling experience which has grown up. There are certain broad trends in philosophy which are unmistakable. While I do not wish to assert that all philosophers agree, there is far more agreement than is usually realized. Let us remember that the personal equation is prone to enter very largely to determine the outlook in this supreme synthesis of human thought. Nothing would make some people materialists; and others are just as suspicious of romantic idealism. It will be hard even for experts to reach unanimity in these matters. And yet philosophy has grown in richness of insight, in increase of distinction, in the discovery of new possibilities. And I would go even farther than this and say that many of these basic problems show signs of being conquered. All philosophers agree that philosophy is very much alive these days and that distinct progress has been made along many lines.

Finally, we asked about the relation of philosophy to science and to religion. This topic is so large and important that we must devote a section to its discussion. What we shall say will, I hope, make clearer the points we have noted in this preliminary definition of philosophy.

Philosophy, Science and Religion.—Since both science and religion concern themselves with the fundamentals of human experience, the difference between them and philosophy calls for consideration. Let us hasten to say that the lines of activity of the human mind are not completely distinct. They co-exist and influence one another. The demarcation which we seek must be one of degree and of emphasis. In other words, there is much reflection upon the world and upon human life in all three of these fields.

If we were to arrange these three subjects in a series, we

would place philosophy between religion and science. It partakes of the nature of both. Like religion, philosophy always brings in the question of the bearing of its theory of the world upon man, his values, hopes and destiny. A philosophy of life is an integral part of it and its completion. Like science, on the other hand, it puts stress upon reason and reflection rather than upon tradition and revelation as the means to accomplish its task. It seeks to build a well-tested theory of the world upon the foundation of human experience in a persistent and rational way. Let us look at these agreements and differences a little more closely.

Religion has been pretty thoroughly investigated these days. Anthropologists, historians, psychologists and philosophers have all studied it in its various levels and manifestations. Religions differ so much from one another that it is difficult to find a common denominator. Recent writers on the psychology of religion point out that religion involves *behavior, belief and feeling.* It is a common mistake to select one of these three elements and to neglect the others. Thus Frazer defines religion as "a propitiation or conciliation of powers superior to man which are believed to direct and control the course of Nature and of human life." [1] There is in this definition too much stress, perhaps, upon behavior. Pratt defines religion as the "serious and social attitude toward the Determiner of Destiny." [2] We must take *attitude* to include all three of these elements. Perhaps the following definition by Thouless is the most satisfactory: "Religion is a felt practical relationship with what is believed in as a superhuman being or beings." [3] We must recognize that there are various levels of religion and that it is even possible that the attitude and sentiments characteristic of ethical religions may be transferred to social relations.

There is not so much a thing called religion as specific

[1] Frazer, *The Golden Bough*, vol. 1, p. 63.
[2] Pratt, *The Religious Consciousness*, p. 1.
[3] Thouless, *An Introduction to the Psychology of Religion*, p. 4.

religions. And each religion has a pretty definite content and spirit. There are beliefs in it and practices and hopes and fears. These beliefs are apt to take the form of dogmas, of views to be accepted as essential and necessary. The hopes and fears concern man's salvation, his relation to God or the gods, his life after death. The practices consist of rituals and ceremonies bound up with these beliefs and hopes and fears. Now that which, on the whole, characterizes religion is its foundation. Tradition, authority, a measure of reflection and deep feeling are the main pillars on which it rests. There is little serious effort to throw all these questions open and to trust to experience and reason to reach the truth. And it is at this point that religion and philosophy part company. The difference is one of attitude and method. Naturally, in a reflective age, religious men can hardly escape some examination of their views and there is then an attempt to justify them. But such an attempt leads directly to philosophy. It is an appeal to reason. *Here is a great hypothesis about the world; what can be said in its favor?* Theology is a systematic presentation of the beliefs of a particular religion. Apologetics is a defense of such a theology. Philosophy of religion is an examination of religion and a weighing of its truth and merits in the light of general philosophy. It favors what Kersopp Lake calls experimental religion.

In the last part of our book we shall have something more to say about religion, but we have accomplished our present purpose which was to distinguish philosophy from religion. It is its impersonal, objective, rational method which marks off philosophy. Philosophy is not a cult. It has no ritual. It is an activity of systematic reflection which has no recognized barriers. It is man's mind curious to understand and estimate the world. The philosopher does not try to edify but to know the naked truth about life. Of course, it may be that the universe is as friendly as the Christian religion has supposed. Again, it may be that it is not. The point to note is the method and attitude.

Let us now consider the agreement and difference between philosophy and science.

The attitude of the philosopher is clearly very much like that of the scientist. Both have the same mental curiosity and keen desire for valid knowledge, the same willingness to bend theories into line with experience, the same faith in methodical analysis, persistent investigation and reflection. Were we defining philosophy by reference to the trained mental attitude and intellectual habits, we would identify it with science. In this sense it is a science. They have a common tradition and inheritance which goes in part back to the Greeks. Probably the philosopher should swallow his pride of ancestry and emphasize this identity of attitude in this day in which so many people know something of the spirit of science. The philosopher is inspired with the same disinterested zeal to solve intellectual problems as is the scientific specialist.

In this age of early instruction in the various sciences, the student who finally comes to philosophy with mixed feelings of hope, curiosity and distrust has already some acquaintance with the spirit and methods of science. He knows and admires in such men as Newton, Galileo and Darwin, their whole-hearted endeavor to solve specific problems in the domain of nature. It is this spirit, as much as what they have accomplished, which attracts those who are generous-minded. We can, therefore, best convey to the beginner a true idea of philosophy by saying that it has the same general attitude toward the world that science has. Both concern themselves with knowledge and both seek it openly and methodically and in disregard of consequences. The philosopher is not a mystic nor the advocate of some esoteric cult; he is a scientist.

And yet there is a difference. When a man is called a scientist, we tend to ask whether he is a botanist or a physicist or a mathematician or a chemist and so on, with the other possibilities of specialization in view. We do not think of

a man as being a scientist-in-general. We assume that he is pursuing some particular line of investigation which is easily classified along with other lines. But to a good many a philosopher is just such a strange creature, a man who wants to be a scientist-in-general. Let us see whether we can explain the difference between the work of a specialist in science, a devotee of some particular science, and the work of a philosopher, without leaving the impression that the philosopher is a sort of jack of all trades and master of none, a man who wants to be a scientist and yet will not adopt a specific field.

The answer to this problem lies in the recognition that the special sciences do not exhaust science, that is, the demand of the intellect for comprehension of the world. And this for two reasons. First, because the knowledge claimed by the special sciences rests upon experience and upon the work of the mind, and this foundation must be studied before science is complete in this direction; second, because the results of the various special sciences must be coordinated and rounded out into a consistent view of the world, a task clearly going beyond the aim of any one science. Let us look at these two points for a moment.

Philosophy is a generic term which covers a peculiar group of basic disciplines as well as this synoptic effort to interpret the universe as a whole. These basic disciplines may be spoken of as logical in character. We may call logic the science of the principles and conditions of correct thinking. It is a science at second remove from things. It concerns the way in which experience is used in all the sciences in order to achieve true results. It is easily seen that human thought is common to all the special sciences and its validity and laws, therefore, a common assumption. It is obvious that logic and theory of knowledge, parts of philosophy, are needed to complete the special sciences. As we advance in our study of philosophy, this point will be better understood.

Philosophy is not a special science with a particular subject-

matter as a field for exploitation alongside of and coordinate with the subject-matters of other special sciences. It does not study a particular range of physical phenomena nor a particular range of mental phenomena. What, then, is it concerned with? It is concerned with the bearing of the results of all the special sciences upon the final question of the general nature and characteristics of the world. It examines distinctions and fundamental concepts and seeks to arrange them together in a synthetic way. Sidgwick put this situation very well: "The important distinction is that the sciences concentrate attention on particular parts or aspects of the knowable world, abstracting from the rest; while it is, in contrast, the essential characteristic of philosophy that it aims at putting together the parts of knowledge thus attained into a systematic whole; so that all the methods of attaining truth may be grasped as parts of one method; and all the conclusions attained may be presented, so far as possible, as harmonious and consistent."[1] Much the same idea is expressed by another philosopher, Taylor, in the following passage: "What the metaphysician asserts is not that there are facts with which the various special branches of experimental science cannot deal, but that there are questions which can and ought to be raised about the facts with which they do deal other than those which experimental inquiry can solve."[2] Philosophy has for its aim, then, not the discovery of some province which has not already been worked by the usual methods of observation, experimentation and conjecture, but the interpretation in a critical and coordinating fashion of the principles, assumptions and conclusions of the special sciences with the large aim we have already indicated in mind. We conclude that philosophy cooperates with science. *It seeks to perform a work of supplementary reflection.* And it is aided in this by the logical disciplines in which it is peculiarly at home.

[1] Sidgwick, *Philosophy, Its Scope and Relations*, p. 11.
[2] Taylor, *Elements of Metaphysics*, p. 9.

It is not until the student of philosophy has grasped this double functioning of philosophy that he is able to appreciate *its peculiar nature as at once critical and speculative.* The final aim of securing an interpretation of the nature of the world forces it to be speculative. It deals with "first and last things," with that which necessarily surpasses mere observation and demands sympathetic insight and imagination. In this it differs only in degree from any science, for it is foolish to deny the use by science of creative imagination. The great scientists are poets who harness their imagination to problems of an intellectual sort and feed them with facts and relations. Great philosophers are also intellectual poets. And they seek to temper and direct their thought by the logical analysis instilled in them by the logical disciplines. But the emotional pressure back of philosophy is greater than that back of any special science, as we have seen; therefore, many philosophers have been too speculative and too little critical. To combine these two tendencies in the proper amount has become the ideal of the philosophy of to-day. He who is too speculative and too little critical is apt to be a romanticist and to do little good to philosophy. He who is ultra-analytic too often lacks constructive power and falls into mere scepticism. But when we consider the task which philosophy has been set, all this is not strange. What wonder that so personal and vital a thing expresses the bias and nature of him who seeks to rede the riddle of the universe! What wonder that there are schools of various sorts, some more closely allied to religion, others to science! The problem for him who philosophizes is not so much what will philosophy agree upon as what will be *his* philosophy after he has learned to philosophize.

The Competency of the Philosopher.—To-day we associate science with a method, that of detailed investigation and tested conjecture. Has philosophy, also, a method, or is it forced to rely on unmethodical inspiration or intuition? Is the philosopher more like a poet than like a scientist? Much

has been said about speculation in a derogatory way. It is often hinted that the philosopher spins his conclusions out of his own consciousness in an uncontrolled way and that they can, therefore, have little tested validity. Such statements are, however, oftenest made by those who know practically nothing about philosophical systems and, themselves, entertain the strangest ideas about the world at large. It is perfectly true that there is variety in philosophy and that many systems of philosophy are but rationalizations of beliefs which have had a rather uncritical origin. But the great systems and the best tradition in philosophy have expressed a high intellectual standard and a really critical approach to all the foundations of belief. The chapters that follow must justify philosophy to the serious reader if anything can that is written in this book; but a few words can be said in anticipation of the proof by eating.

Just because philosophy is a reflective criticism and synthesis of the theoretical conclusions of the sciences, physical, mental and social, it cannot test its conclusions by detailed facts of its own finding. It can and must test them by the theories and principles put forward by the various sciences. In a very real sense, these are its data. It works with science and experience at large. Just as a particular hypothesis in any field must be comprehensive enough to cover interpretatively all the facts relevant to it, so a philosophical hypothesis must be capable of covering the better founded theories. It goes further than this, so far as it criticises concepts and distinctions which have logical flaws or are too narrow. Just as the special sciences seek coherence within their own domain, philosophy seeks coherence in their synthesis.

The method of philosophy is to raise necessary questions of a general character, to examine what the various sciences have to say, to suggest modifications and adjustments, to relate all this to its foundation in experience and thought, and so to assist the process of unification which is all the time under way. And here I would make a very important dis-

tinction. Many scientists are also philosophers. We must not have the idea that a man must be labelled as one or the other. He may be both. And he may be scientist and philosopher in varying degree. There are philosophically inclined scientists, and these men help the professional philosopher very much. A philosophically inclined scientist is one who analyzes his concepts very carefully, sees how they are grounded in experience and tries to grasp their bearing upon, and relation to, the concepts of other sciences. Young scientists seldom have the time to do this sort of thing. They are too busy getting established in their own field. Often, too, it is only as they grow older that they have the larger implications of their field forced home to them. The philosopher is a synthesist by profession, and his danger is lack of comprehension of the actual movement of the sciences. To be competent, the philosopher must have a well-trained and instructed mind and be in close touch with the sciences. It is this vast range which makes his task increasingly difficult and which makes it desirable that men working in the various groups of sciences should aim to assist philosophy by looking at their group synthetically. Fortunately, this work is being done both in this country and in Europe. Philosophers and scientists are less prone to scold each other and more willing to cooperate.

The professional philosopher should possess a peculiar advantage by reason of his training in logic and psychology. These disciplines afford him a knowledge of knowledge and of its conditions and genesis. Why this critical insight into the nature and conditions of knowledge is so valuable will become clearer as we proceed. It is not too much to say that, during the last half century, philosophy has emphasized theory of knowledge as never before. It is easy to see why training in logic should make the philosopher more competent, and at present we shall say no more about it. A knowledge of psychology is of advantage because it is the fundamental mental science. A thinker who knew only the

physical sciences would be unable to gain as just a view of reality as one who was also acquainted with the best knowledge about mind. We shall see that psychology throws much light upon many problems.

The philosopher has another advantage in his knowledge of past attempts at solving basic problems. Distinctions of the greatest assistance to reflection have gradually developed. What Plato, Aristotle, Locke, Hume and Kant—to mention only a few—thought cannot but be of value to any thinker. There can be little doubt that training in the understanding of the various systems of the past develops the power of abstract thought and gets one familiar with the basic terms of philosophy. It also warns the thinker and puts him on his guard against ideas which have been outgrown. Thus the history of philosophy gives a valuable perspective. We shall use it, in some measure, in this text.

Hard though his task is, the philosopher can claim a training relevant to it. He does not work alone nor in a sort of internal vacuum called his consciousness. He reflects upon a rich material to which science is adding every year and he has the benefit of centuries of persistent thought.

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CHAPTER II

A BRIEF SURVEY AND A PROGRAM

A Glance at the History of Philosophy.—As every one knows, philosophy is a very old subject. It is not surprising, then, that its methods and outlook have been greatly altered from age to age without affecting a certain identity of purpose.

The word, itself, is of Greek origin as are so many of our scientific terms. The verb, to philosophize, is found in the writings of Herodotus and means the pursuit of knowledge. Thus, as Paulsen pointed out, the word was first employed, not as a technical term, but as a word in general use. "The reader of Herodotus will find it in the well-known story of Solon's meeting with Crœsus. Crœsus welcomes the Athenian with the remark that the fame of his wisdom and of his travels has already reached him, 'that thou, philosophizing, hast visited a vast part of the world for the sake of reflection.' Evidently, the expression, 'for the sake of reflection,' intends to explain the word 'philosophizing.' What makes Solon a 'philosopher' traveller is the surprising circumstance that he does not, like the merchant or soldier, pursue a practical object in his journeys."[1]

There can be no doubt that something of this large general meaning adheres to the term to this day. There are levels of philosophy, and any deeply reflective man is something of a philosopher. Such an individual is surely to be admired, but he makes a mistake if he tries to start afresh and does not profit by communion with the great and serious minds of the past. Plato and Epictetus, Kant and Hegel, Montaigne

[1] Paulsen, *Introduction to Philosophy*, p. 20.

and Pascal, Locke and Hume, have much to tell all of us. And it is egotism not to sit at their feet for a while.

It seems best, therefore, to speak of technical and non-technical philosophers. And there are naturally grades of both kinds. Some non-technical philosophers have been very able men, and some technical philosophers have been far less gifted. Moreover, the one class shades over into the other. It is often difficult to say whether we should treat a man like Emerson as a technical philosopher or not. On the whole, he seems to belong more to the class of poet-philosophers, wise and reflective men who hardly appear in the history of technical philosophy.

The first technical philosophers were men who sought by a sort of reflective inspection of nature to discover the substance of which it is made. They were called physicists or cosmologists. Their advent was important because they were the first to turn their back upon mythology, or the account of the world in terms of superhuman agents, and to attempt to give an explanation in terms of the *stuff* of which things are composed. Their guesses are naturally crude in our eyes and yet they were daring. Sometimes, indeed, they showed a remarkable measure of insight into principles of explanation which have since been further developed and used by the special sciences.

At first, there was far more confidence in direct reflection and less awareness of the difficulty of the problems philosophy had set itself than was the case later. This heroic age lasted down to the period of the sophists and included such men as Heracleitus, Pythagoras, Parmenides and Anaxagoras.[1]

After reflecting upon nature and developing all sorts of speculations, men of this type began to think about man, himself, and to enquire into the nature of thinking and of human conduct. Consequently, such subjects as logic, psy-

[1] The student should look up these names in some history of Greek philosophy, as Weber, Windelband, Gomperz, Burnet or Benn. The teacher should encourage the class to establish the habit of reading about the various thinkers mentioned in the text.

chology, ethics and politics were begun. This enlargement of the field makes itself apparent in the writings of Plato and Aristotle.

At the same time, as men became more accustomed to investigation, the special sciences began to arise. Mathematics and astronomy grew apace. Observations in meteorology, medicine, anatomy and mechanics were carried through and theories constructed to interpret them. The specialist began to appear. Here we have a situation which has tended to maintain itself ever since. On the one hand, there is the investigator who limits himself to intensive work in a narrow field; on the other hand, there is the thinker who seeks to coordinate results and see things together. This division of labor was inevitable. Even in antiquity it came to pass, as in the Alexandrian period. The technical philosopher concerned himself primarily with logic, ethics and the ultimate nature of things, while he left to the specialist grammar, history, geography, astronomy, mathematics, etc.

This division of intellectual labor, which is upon us in its fullest scope to-day, was checked by the decline of the Ancient World. The Middle Ages lived in large measure upon what had been inherited from the Græco-Roman civilization. Investigation largely ceased. It was not impossible, as a consequence, for able men to cover very nearly all the knowledge possessed by the period. The great scholastics, Albertus Magnus and Thomas Aquinas, sought, again, to organize the whole field much as Aristotle had done. The result was naturally often very formal; and yet of the great ability of these men there can be no doubt. In those parts of philosophy which require the power of formal analysis distinct advances were made. And yet philosophy was held back because man's knowledge of his world was too meager. Traditional distinctions tended to maintain themselves.

In the fifteenth century came the Revival of Learning and, soon afterward, the experimental sciences with which we are now so familiar developed. Mathematics, also, took on new

life. This new type of mental activity was certain to have its effect upon philosophy. Novel speculations were engaged in. The anthropocentric view of the world was challenged. The mechanical interpretation of all events was suggested. All this had tremendous import for man's view of himself and his world.

For a brief time philosophers were also scientific investigators. We have men like Descartes and Leibniz, able to cover a large range of special subjects and likewise to create novel theories in the more strictly philosophical subjects. But, before long, the division of labor initiated in antiquity began again. John Locke stresses the problem of the origin and nature of knowledge. Berkeley challenges the theory of a physical stuff. Hume makes his approach to philosophy from psychology. Increasingly, the philosopher busied himself with logic and with the nature and foundation in human experience of basic concepts. His aim was to supplement science by discussing its assumptions and implications. Added to this was the motive of synthetic speculation. Thus we may say that the philosopher became a specialist in his turn, a specialist in logic, theory of knowledge, ontology, ethics, etc.

This adjustment between philosophy and science has taken considerable time. Quarrels and misunderstandings have frequently occurred. It cannot be said that, even to-day, there is no shadow between them. The scientist is often afraid that the philosopher wants to dictate to him and the philosopher has not always realized to the full the bearing of the results of the sciences upon his task. But there is ample evidence that a new era of amity and coöperation has arrived.

This brief survey has necessarily been very external but it may suggest the proper idea of the relation between philosophy and the special sciences. Let us now turn to an examination of the main divisions of philosophy.

The Main Divisions of Philosophy.—In distinguishing philosophy from science, we pointed out that the detailed

knowledge gained by the special sciences rests upon experience and the work of the mind, and that it involves general assumptions. It is this aspect of science that philosophy studies. It often happens that the assumptions of one set of sciences do not harmonize with those of another set. Often, for example, there seems to be a clash between the inorganic and the organic sciences. Traditions grow up in science, as everywhere else, and need to be overhauled.

First of all, then, philosophy devotes itself to a thorough study of the *nature and reach of human knowledge.* This is obviously a basic investigation which no special physical science itself makes. And it is just as obvious that it requires expertness of its own type.

The two philosophical disciplines which concentrate upon this question are logic and epistemology or theory of knowledge. These are both very old subjects but have grown of late, much as the special sciences have grown.

Logic covers a wide ground. It may be defined as the science of the nature and conditions of correct thinking. It studies the structure of knowledge and its foundations and development. Whatever else science is, it is supposedly knowledge. It consists of propositions. Logic studies the various kinds of propositions. Thus 'facts' are propositions asserted on the basis of careful observation. Theories are complexes of propositions supposedly relevant to problems and facts. In short, the logician makes a careful analysis of all the mental processes involved in thinking and of the structures and relations disclosed in it.

An exceedingly large part of philosophical activity has concerned itself with epistemology. One reason, at least, for this has been the controversy between realism and idealism to which we ourselves will give considerable attention. The idealist has maintained that it is impossible to know, or believe in the existence of, things which are independent of mind, while the realist has argued that it is quite possible and intelligible to do so. This controversy had an historical

origin and development which casts much light upon it. It is our intention to take up this historical material sufficiently to give meaning to this basic epistemological dispute. Our own position will be realistic but we shall seek to do justice to the motives of idealism.

Epistemology is a pure or theoretical science, not an applied or practical one. It has, however, like all theory, very important implications. Our whole interpretation of the world may depend upon our epistemology. If mind is central in reality, the universe may be a friendlier place than if mind is episodic and linked with special conditions only seldom achieved, as on this earth.

Epistemological questions have been rather baffling and some philosophers have even become impatient with them. But I do think that many of these questions have been clearing up of late and that we have no good reason to be disheartened. Quite the reverse in fact. We shall make no apology for going into epistemology in some detail. The student will find it fascinating and will discover that it will give him perspective in regard to cosmological problems. There seems to be a natural, logical order if we are to make an assured advance in philosophy.

What, then, is epistemology? It is a science, following upon logic, which devotes itself to the study of the nature, conditions and reach of human knowledge. Let us note some of the typical questions it asks. What does knowledge seem to be at the level of perception? How is it possible for me to know events which belong to the past or objects which are far distant? How is it possible to know things which are outside my consciousness? Do we know by means of ideas or logical contents? Or is the object known given in our consciousness? These questions will give an inkling of the subject-matter of epistemology.

There is nothing artificial in all this. These questions are unavoidable as soon as we begin to reflect in any systematic fashion. As a matter of fact, scientists have often been led

to ask themselves just such questions and have thereby passed over into philosophy. Karl Pearson's *Grammar of Science* is an instance of this natural extension of interest. The writings of Ernst Mach, a physicist, and of Henri Poincaré, a mathematician, furnish other good illustrations of the fact that epistemology springs up inevitably. Though such types of epistemology are usually suggestive, the philosopher invariably finds that a better acquaintance with the development in philosophy, itself, would have been advantageous.

Many reflective scientists are today on their guard, and assert that science neither affirms nor denies a physical world independent of mind but that it is merely ordered knowledge, a discovery of regularities in experience. Still others affirm that we know only *phenomena,* that is, appearances in our experience. We have, in science, agnostics, skeptics, and positivists. Agnostics are individuals who say that they do not know what ultimate reality is. Agnosticism is a form of skepticism. A skeptic is one who doubts man's ability to secure certain knowledge. Skepticism has its degrees and moods. Another current position, closely akin to agnosticism, is positivism. Positivists are doubtful of the value of all enquiries in regard to the ultimate reach of knowledge and fall back upon science as consisting of well-tested facts and theories within human experience. As a matter of fact, agnosticism, skepticism and positivism are all reactions against romantic or dogmatic systems of philosophy. *They are, as it were, negative epistemological positions.* It follows that we have no right to adopt them and even that we cannot appreciate their full import until we have studied epistemology in a systematic and technical way.

Logic and epistemology are preliminary philosophical sciences because they prepare the way for the solution of what are called metaphysical, or ontological, problems. We must know whether we have good reason to believe in an independent physical world before we ask its nature. As we proceed, it will become apparent that questions as to the nature

of *what exists* depend in part upon our answer to epistemological questions.

The student must no more be frightened by these impressive names than he would be in a science like physics by its technical terms. Metaphysics is the science dealing with the ultimate nature of reality, that is, with the basic questions which can be asked about the universe. Here, again, a few topics may make it clearer. Is reality of the nature of a spatial matter and energy? If so, what is mind, and what is its locus in reality? Or is reality of the nature of mind?

These most general and basic questions about what exists are the concern of that part of metaphysics which is called ontology. *Ontology is literally the science of being.* Materialism is an ontological position. So is spiritualism, which may be called its opposite. It is obvious that ontology as a science depends in part upon epistemology.

As ontology enters into more detail, it becomes *cosmology.* Philosophy is led to analyze the basic concepts of the sciences. What should we mean by space? by time? Is the universe finite or infinite? Is there a break between the inorganic and the organic? What should we mean by life? Are physical systems necessarily mechanical? What should we mean by mind? by consciousness? Questions such as these are inevitable and involve a profound reflection upon the results of science in the light of logic and epistemology.

Finally, philosophy raises the question of the nature and status of values in such a world as that revealed by cosmology. This division of philosophy is called *axiology* or the theory of values. After the more general questions about values are examined, philosophy passes to those special sciences of value which have developed with reflection, such as ethics, æsthetics, and the philosophy of religion. Ethics deals with the categories of morality, with good and bad, right and wrong, and endeavors to determine their meaning and conditions. Æsthetics is a reflection upon the nature of beauty whether in art or in nature. Philosophy of religion deals

in part with the nature of religion and in part with the problem of the degree and way in which the universe meets the demands and expectations characteristic of religion.

There is, of course, no reason to limit philosophy to these three sciences of value. They are simply taken as typical. Every field of human endeavor and experience contains questions which only basic reflection can throw light upon. Thus there is political philosophy and legal philosophy and also a philosophy of history. It is, however, scarcely possible to cover such a large domain in an introduction. What is primarily desirable is training in the method of philosophy and some insight into various solutions of basic problems.

Where and How to Begin.—It is obvious that there is no royal road to philosophy and that patience is a prerequisite. One must work one's way into the subject bit by bit. There are different possible paths. A fairly common way has been the use of the history of the subject as an introduction. But is it not the philosophy of the present with which the beginner wishes to get acquainted, just as it is the physics of the present that he is taught? Philosophy is very much alive to-day and is not merely a thing of the past. A more satisfactory method is probably the indication of problems and the discussion of them in a systematic way. It is this method which has here been adopted.

But while problems and principles must dominate, we must not forget that it is almost impossible to get certain of these problems before the mind apart from some idea of their origin. The distinctions made by thinkers during the last three centuries cannot be ignored because they are so constantly referred to or implied. Hence I have judged it best to discuss the theories of Descartes, Locke, Berkeley, Hume and Kant. The problems thinkers are to-day trying to restate and solve are in essentials the problems raised by these men. This much of history will be very useful.

The method we shall adopt may be called genetic for lack of a better name. We shall begin with a description of the

outlook characteristic of common sense, and gradually pass, under the pressure of reflection, to a more critical and adequate position. We shall not assert offhand what we mean by such terms as perception, mind, consciousness, the physical world, but we shall seek to discover what distinctions and views seem forced upon us as we reflect.

The student must be prepared to see many of his beliefs challenged and the attempt made to define terms which he has used vaguely without enquiring into their precise meaning. And this means that he will be asked to pass from the level of common sense to the level of systematic reflection.

What, then, is common sense? It is, perhaps, best describable as the attitudes and beliefs characteristic of a social group as a whole. It is the level of outlook attained by inexpert thought as a result of the rough pressure of experience. While common sense is not fixed and does change through the absorption of new ideas, it has certain fairly common elements. Thus, in the matter of perception, there is the tendency to believe that the individual sees things in a direct fashion, that physical objects are open to his inspection. When we pass beyond this attitude toward the physical world, we soon find that the tenets of common sense vary from group to group and from age to age. There are no fixed beliefs about the origin and destiny of things. And common sense now absorbs much of science and becomes *enlightened* common sense.

In contrast to common sense, which is largely practical and personal, science is a method of systematic investigation which has been developed by specialized and expert groups in society at a certain cultural level. Problems are defined, systematic observations carried through, methods of experimentation and measurement developed, the imagination called upon to do logical service, the complex analyzed into the simple and recurrent, syntheses made, differences carefully noted, theories verified.

As a result of centuries of this kind of work, nature and

mind have been carefully explored and well-tested theories in regard to the structure and relations of things have been achieved. It is really astonishing to find how much has been accomplished. To divide is to conquer. But along with division has gone cooperation and growth.

We should not be surprised to find that science includes all that common sense can give and much besides. And that is why philosophy must build ultimately upon the results of science. It is not so much that science is opposed to common sense on all points but that it includes that which is valuable in it.

What, then, does philosophy add to science when it builds upon its results? How does philosophy supplement science?

We have already made a few statements in regard to this question in the first chapter. Let us recall what we said there and relate it to the divisions of philosophy which we defined in the present chapter. We pointed out that the special sciences, which take up a particular domain to examine, do not exhaust all our problems, and this for two reasons: First, because the knowledge claimed by the special sciences rests upon human experience and the work of the mind, and this foundation must be studied before knowledge is complete; second, because the larger results of the various special sciences, their generalizations and basic concepts, must be coordinated and rounded out into a systematic and coherent view of the world.

The first reason obviously concerns the motivation of logic and theory of knowledge. We want to know just what knowledge is, what it rests upon, its validity, nature, and reach. Clearly we are unable to give a complete interpretation of science apart from an investigation of these questions which science, itself, does not deeply concern itself with for lack of time. We can easily see the reason. No one science feels that these questions are its duty rather than the duty of some other special science. Why should physics examine these questions rather than chemistry or biology? Their examina-

tion has, therefore, always devolved upon philosophy. We may say that logic and theory of knowledge have busied themselves with the general cognitional assumptions of the sciences. Let me again detail a few queries which reflection quickly raises. What is experience? Is a fact of perception the same as a scientific fact? What is a law of nature? Can we know things and events external to ourselves? Has nature a determinate structure which we can decipher? What is truth? What are the criteria of truth? These are unavoidable questions which the very work of science presses upon us.

But let it not for a moment be supposed that philosophy undertakes to test scientific facts in some super-scientific way. It takes these facts at their face value much as science does. If they are faulty, only the technique of science can revise them. In no sense, does philosophy undertake to dictate to the special sciences. It only wishes to make clearer the assumptions underlying the whole process of investigation.

Finally, in metaphysics, philosophy undertakes to examine the concepts or categories which the various sciences use and to clarify them and to systematize them. It does so in the light of logic and theory of knowledge and in view of the whole range of the sciences. We saw that this work can be partially done by the philosophic scientist. And let us hope that the number of these will increase in America as they have been increasing in Europe. But no scientist is a specialist in more than one field, and so beyond that field he is in much the same position as the philosopher with, perhaps, this handicap that he has not been accustomed from the beginning to a wide field of interest and is apt to be dominated in his synthesis by the principles of some division of science like the inorganic sciences or the biological sciences or the social sciences. We shall have many occasions to examine such categories as time, life, mind, society, mechanical causation, teleology, freedom, necessity. This sort of analysis needs to be done. It is not the work of any one of the special sciences, though their results throw light upon it.

The aim and method of technical philosophy should now be clear. Its work is that of supplementary and systematic reflection. The problems with which it deals are not unreal and artificial but definite and unavoidable and arise from the living movement of well-informed reflection. After reading these introductory chapters the student will, I hope, have a precise conception of philosophy in contrast to the confused, almost magical, notion of the uneducated layman such as Dickens humorously presents through the mouth of Mr. Squeers: "What's the reason," said Mr. Squeers, deriving fresh facetiousness from the bottle; "what's the reason of rheumatics? What do they mean? What do people have 'em for, eh?"

Mrs. Sliderskew didn't know, but suggested that it was possibly because they couldn't help it.

"Measles, rheumatics, hooping-cough, fevers, agers, and lumbagers," said Mr. Squeers, "is all philosophy together; that's what it is. The heavenly bodies is philosophy, and the earthly bodies is philosophy. If there's a screw loose in a heavenly body, that's philosophy; and if there's a screw loose in a earthly body, that's philosophy too; or it may be that sometimes there's a little metaphysics in it, but that's not often."

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CHAPTER III

PERCEPTION AND THE EXTERNAL WORLD

The Common-Sense View of the World.—The outlook upon the world which people have to-day before they study science or philosophy very deeply may be called that of common sense. Certain distinctions are accepted as a matter of course, although they are not worked out clearly or in detail. Every one is aware of, and uses, certain broad contrasts, such as between the mental and the physical, the past and the present, the present and the absent, the percipient and the objects which he perceives, himself and others. Nature is, again, a term for a perdurable realm about whose history something is known and which will outlast the human beings who come and go upon its surface.

The philosopher does not attempt to belittle this knowledge which hard and constant experience has forced upon mankind. The plain man knows as well as the scientist, the poet as well as the philosopher, certain elementary and brutal truths about man's place in nature. The latest dramatist but repeats what Job and Sophocles already knew. Man is obviously only a part of a larger whole.

We have good reason to believe that the common distinctions which we all make are the result of adjustments and experiences which could have led to no other conclusions. I sit in my study and listen to the sounds which come up to me from the street. They *mean* to me a busy life of traffic and enterprise. I think of railroad and factory, store and farm, and the people who control them and work there day after day. I pick up a newspaper and read about the course of events in Europe, about an earthquake in Italy or Japan,

about the completion of a railroad in Alaska. Or I divert myself in the evening by reading a chapter of some history or a novel. Thus I distinguish the past from the present, imaginary people from living people, my thoughts from things. I label and interpret the experiences which come to me. And I feel a naturalness and necessity in so doing.

Common sense would seem, then, to present an interpretation of many and diverse experiences in terms of a stable world of objects and events, classified, on the whole, in a satisfactory way. The individual scarcely thinks of escaping from these classifications and distinctions. They seem to him natural and inevitable. To develop them, as science has done, seems to him possible and desirable; to ignore them, absurd. When the Spring comes, I look in the cellar for the spade I placed there last Fall, find it, and go out to dig up the soil to prepare it for the seed I intend to sow. As a matter of course, I assume the existence of all these things and the results of my action upon them. At every moment in the day, I am called upon to make adjustments to my surroundings and to other people, and it does not enter my head to doubt that they are as real as myself. I am one thing among many in a tremendously large and complex world.

But in stressing the agreements found in everyday life, I must not be assumed to be disregarding the disagreements which would arise as soon as any question came up as to the nature of existence, the meaning of life, immortality, the soul, God, the creation of the world, etc. There is a penumbra of theory and tradition of the most heterogeneous sort around these things and distinctions which I have been stressing. Are things animated by spirits as early man supposed? Have they a will? Is life a vital force? Is the soul a chemical complex? Or is it an immaterial substance? Are things made of matter? And what is matter? Yes, there are disagreements enough as to the *nature* of these things and of the self; but I do think that the contrasts and distinctions which I have mentioned are common and used by all, and

that they seem to express the fact that man is an organism adjusting himself to an environment and capable of distinguishing himself from the things around him. And as we are concerned, first of all, with theory of knowledge, we shall take our departure from the facts and claims of perception. What does perception seem to be?

Natural Realism.—When the individual comes to examine his experience in perception, he will, I am sure, discover that he seems to himself to perceive things or objects which are around him. These things seem given and open to inspection. We *see* them, as we say. There they are before our eyes and exposed to our touch. The very things we handle can thus be observed from various angles. And observation is an activity of ours which terminates on the very surface of the thing observed. To see, to inspect, to observe, to intuit, all have this sense of exposure, or givenness, on the part of the object toward which we are so acting. To perceive an object is to be aware of it, to have *it* given as that towards which *we* are attending. A cross-section of our experience while we are perceiving has these two terms in relation.

Now it is easily noted that certain beliefs and meanings are ordinarily connected with perception. We think of these objects as *continuants,* as things which last and continue to exist whether we see them or not. We think of them as neutral or common to all spectators who look at them. And we think of them as unaffected by our mere observation. It is this outlook, this experience of perception, which we mean by natural realism.

The physical world is, then, regarded at first as open to all observers and yet as independent for its existence and nature of this intermittent inspection. Thus when we try to discover what perception is experienced as, we are left with the impression that it is of the nature of an event in which the individual is more or less active and has presented to him in his experience a specific colored and shaped thing as his object. The chief condition of this event which is clearly recognized is the

use of his sense-organs. He who does not have eyes cannot see things. But, however conditioned, perceiving is an event in which the physical world, itself, is present in the field of vision. The individual opens his eyes and turns them in this or that direction and notes definite things. As ordinarily used, the term 'seeing' appears to be simply a name for this fact of presence, of presentation, of openness to observation when the eyes are used, just as hearing is a name for the presence of sounds in experience when the ears are stimulated. Perceiving is a more general term having a less definite reference to any one of the senses. It would seem, therefore, not to explain anything but just to describe a complex fact of experience, a correlation of the individual's felt activity in the way of looking and hearing and touching with the givenness to inspection of a sensuous object.

Common sense has no reflective theory of the nature and conditions of the event which it calls perceiving a thing. Certainly there is no awareness of the activity of any peculiar ego or self from which energy goes forth to touch the thing and, as it were, to light it up. We see what is around us, and we who see these things are definite concrete individuals not so very different from the things we see, not at all different when these things are other persons. Probably, the tendency to-day for most of us is to accept the teachings of science and to conclude that our sense-organs must be stimulated and that these stimulations must be carried on to the central nervous system and that we react in definite ways towards the source of stimulation. But just why this physical process should lead to the presentation in our experience of the physical object is rather a mystery. The suspicion is not absent that it is not the thing, itself, which is presented. But more of that later.

Again, as we have already pointed out, there are attached to these presentations certain meanings which we firmly and automatically assign to them as objects. It is probable that these meanings are inchoate, that the child with its "buzzing,

blooming confusion'' does not yet possess them. Nevertheless, the adult can find them as characteristic of his perceptual experience. These perceived things are independent of the act of perceiving, which is a purely human and organic affair. We cannot stare rocks and trees out of countenance, though we may break them into pieces by means of dynamite judiciously planted and exploded. The physical world is also judged to be permanent. The hills and heaths are eternal as measured against the brief span of life granted human beings. Combined with these two meanings is the sense of seeing and meaning the same object, of lifting it, handling it, going towards it. These meanings have their factual foundations which are not far to seek, and they seem to all of us natural and inevitable. We recognize things; we react to them again and again. There would seem to be a fundamental validity in these realistic meanings of perception. Surely, the burden of proof is on those who would deny them.

When, then, in the pages to follow the student is startled by the attack upon natural realism, he should bear in mind the frank recognition which has here been given of the structure and meanings of perception. If I teach that natural realism is, in part, untenable and must be *corrected* by reflection, it will be for what appear to me good and sufficient reasons, which I shall state.

The Recognition of Natural Realism in Philosophy.—It will not be amiss to gather testimony that humanity is ordinarily realistic, from philosophers who have been led by reflection to doubt the independent reality of the world *as presented.*

Let us first glance at the testimony of Berkeley and Hume, two thinkers whose arguments have done much to break down natural realism or to put it on the defensive. ''It is indeed an opinion strangely prevailing amongst men,'' writes Berkeley, ''that houses, mountains, rivers, and in a word all sensible objects, have an existence natural or real, distinct from

their being perceived by the understanding."[1] Similarly Hume observes: "That however philosophers may distinguish betwixt the objects and the perceptions of the senses; which they suppose coexistent and resembling; yet this is a distinction, which is not comprehended by the generality of mankind, who as they perceive only one being, can never assent to the opinion of a double existence and representation. Those very sensations which enter by the eye or ear, are with them the true objects, nor can they readily conceive that this pen or paper, which is immediately perceived, represents another which is different from, but resembling it. In order, therefore to accommodate myself to their notions, I shall at first suppose that there is only a single existence, which I shall call indifferently *object* or *perception,* according as it shall seem best to suit my purpose, understanding by both of them what any common man means by a bat, or a shoe, or stone, or any other impression, conveyed to him by his senses."[2] In short, Hume agrees that the generality of men regard their perceptions as physical things and physical things as their perceptions. Hence, he criticizes a theory to which we shall later refer, that our perceptions, that is, what is presented, are only copies in the mind of physical things outside the mind.

In his *Microcosmos,* Lotze, an able German thinker, describes natural realism in much the same way: "Naive consciousness always takes sensation to be perception of a complete, externally existing, real thing. It believes that the world lies around us illuminated by its own radiance, and that outside of us tones and odours cross and meet one another in the immeasurable space that plays in the colours belonging to things. Our senses sometimes close themselves against this continual abundance, and confine us to the course of our inner life; sometimes they open like doors to the arriving stimulus, to receive it as it is in all its grace or ugliness. No doubt disturbs the assurance of this belief, and even the illusions of

[1] Berkeley, *Principles of Human Knowledge,* sec. 4.
[2] Hume, *Treatise of Human Nature,* p. 202. Selby-Bigge ed.

the senses, insignificant in comparison with the preponderance of consentient experience, do not shake the assurance that we here everywhere look into an actual world that does not cease to be as it appears to us when our attention is not turned to it. The brightness of the stars seen by the night watcher will, he hopes, continue to shine over him in slumber; tones, and perfumes, unheard and unsmelt, will be fragrant and harmonious afterwards as before; nothing of the sensible world will perish save the accidental perception of it which consciousness formerly possessed.'' [1]

And, as we shall see later, there is a strong tendency among recent thinkers to keep as near to natural realism as possible. In America, the new realists and the pragmatists have moved in the same direction, though differing on certain technical points. In England, also, there is a strong movement in defense of the essentials of natural realism.

Natural Realism not a Theory or System.—But we must not make the mistake of taking the outlook which we have been describing as a theoretical position. Only as systematized and refined to meet difficulties does it become a theory of knowledge. Natural realism is much more a practical adjustment which organizes many of the facts of experience in a rough-and-ready fashion. When difficulties arise, new distinctions are made without any very serious attempt to see how they fit into the more usual ones. We have given a broad outline of the outlook and must now pass to the qualifications which are often made, as difficulties are noted. But we should remember that, as qualifications are made, natural realism is tending to pass from a description of what perception seems to be to a theory.

Why is it that I see one side of a thing while you who are standing in another position see another side? Common sense replies immediately ''because you are standing in one position in regard to it and I in another.'' Position, then, has something to do with what I see. Why is this? Common

[1] Lotze, *Microcosmos*, Book X, chap. 34, par. 1.

sense has no answer to give except the empirical fact that what we see varies with certain changes in position of either the percipient or the thing. But if perception is merely an event in which things are revealed just as they are why cannot we see all the sides of a thing at once and even the interior of it? The fact is that we do not; and common sense naturally accepts the fact and notes certain empirical correlations such as that between position, sense-organs, attention and part seen.

Again, common sense sometimes speaks of seeing the *side* of a thing, as though the side seen were a geometrical part of the thing; at other times, it speaks of seeing an *aspect* of the thing or the way a thing *appeared* from a particular angle. An aspect seems to be more intangible and somehow more related to the position of the perceiver than does a side. Yet common sense uses now one term and now the other. What it is certain of is that the physical thing itself is there and somehow seen. Further than that it has not worked the situation out. It is, as I have said, not systematic enough to be called a theory.

There are many other difficulties which have not been faced by the view of perception which we have called natural realism. What, for instance, is the work of the sense-organs and the brain? Do these organs condition *sensations* which are experienced? Or do they enable the observer to look out upon the thing? So strong is the structure of perception with its meanings and beliefs that even scientists are led to hold what would seem to be contradictory positions. Color is out there, a quality of the thing; and color is a sensation in the mind. The thing is other than its appearance to us, for this differs according to circumstances; the thing is as it appears to us.

In its study of perception, philosophy is concerned with the effort to do justice to all the relevant facts. Perhaps, natural realism can easily be corrected to meet these facts; perhaps, it must be modified very deeply; perhaps, it must be

given up almost entirely. In any case, once entered upon the adventure of systematic reflection, we cannot turn back and appeal to the instincts or beliefs of the plain man. We have a problem to solve and can do so only by a theory. As we have examined natural realism thus far, it is a *description* of an outlook which has apparently grown up naturally and has much in its favor, but it is most decidedly not a reflective theory of perception.

Philosophy Should Start from Natural Realism.—Philosophy cannot have an arbitrary beginning any more than an arbitrary ending. Like science, it must grow out of ordinary experience as a supplementation or correction of it. Science arises out of specific problems which must be faced, investigated and, if possible, answered. This setting gives it its strength and significance. The ability to recognize problems which must be met and to apply fruitful methods was the distinguishing characteristic of men like Galileo, Newton and Faraday. Now one of the specific problems which philosophy is called upon to meet is the nature of perception. Is a physical thing actually given to inspection in perception? Or is that which is given mental, though the thing is the source of stimulation and is that to which we are responding? Or is a physical thing a fiction suggested by the recurrence of our sensations? *Now the setting of such questions is our experience in perception.* We must gather all the data relevant to it and make the best theory that we can to cover them.

The specific problem before us concerns the perception of an external world. As we have tried to show, common sense believes that external things are directly observed. Were there no objections to such a view, we would continue to accept it, contenting ourselves with refining our terms and showing their harmony. But since there are difficulties, we must see how they bear upon the beliefs which are given. This method I call genetic. We pass by a process of relevant criticism from opinions held without much reflection to opinions based on thorough investigation. Accordingly, philosophy

must begin with a description of the structure and beliefs characteristic of ordinary experience. Such a preliminary study prepares the foundation and gives a point of departure. The advance of philosophy, like that of science, must be gradual. Many ingenious philosophies in the past made the mistake of despising the day of small things and revelled in speculations starting from principles of an abstract sort. Perhaps the most striking feature of much of recent philosophy has been its concern with details and its very careful study of the structure and conditions of perception. This has given it an analytic and pedestrian character which some have not liked. But let us remember that philosophy has no peculiar source of knowledge. It, also, is limited to the indications given by experience.

Natural Realism and Science.—What is the effect of the knowledge gained by science upon the beliefs which we have found to be so characteristic of ordinary experience? What is the drift of *enlightened common sense,* of common sense influenced by the teachings of science?

The history of philosophy shows that the effect of science has always been the rise of a decided attempt at the reconstruction of natural realism. The belief in *representative ideas,* somehow intervening between the percipient and the thing perceived, has always appeared. This tendency to modify the belief that the physical object is literally presented to the mind's eye can be noted in both the ancient and the modern world. Let us take the seventeenth century in Europe. It was argued that the physical thing is the source of stimulation of the sense-organs, but that something in the nature of a wave-movement or an emission of minute particles must link the object to the percipient. There must be a transmission across space, and this transmission must take time to occur. Is it not, then, the end-effect that is given to inspection? Perception, it was held, must be an act connected directly with this near effect rather than with the remote source. What we can note in the way

of sensuous content must consist of transmitted "forms" or of sensations and images aroused in the mind when the sense-organs and brain are so stimulated. The actual physical thing out there, miles, it may be, from our body, is not given to direct inspection but rather this present content transmitted to us or aroused in us.

Enlightened common sense finds such an argument very plausible. Not that there is any doubt that there are common, neutral, independent, permanent physical things out there to which we respond and which we need as human beings, but that it is hard to see how they can be literally given to inspection, once the conditions of perception are reflected upon. But unless the individual is a serious and persistent thinker, the thread of the argument is not kept, and a sort of working compromise ensues in which the individual alternates between the positions and minimizes their conflict. Even as serious a thinker as David Hume admitted this tendency to hold contradictory positions alternately according to the attitude of mind which was dominant. In the study he would be a skeptic. Out-of-doors he would be a realist. But, of course, this is not a satisfactory situation, and philosophy must endeavor to push on to a theory which covers all the facts in an intelligible way.

Even the scientist ignores the problem as much as possible. He lives and thinks in large measure within the outlines set by natural realism. The physical world which physics and chemistry study is out there in space and perceivable. It is true that color is now considered an effect produced in the "mind" by light-waves which impinge upon the eye, and that sound is a sensation caused by sound-waves. But knowledge is still thought of as dependent upon the observation of things. The power of an habitual outlook with which he has not reflectively broken is so great that he can believe at the same time that the real world is colored and that it is colorless, that it is soundless and that it is sonorous, that it is composed of small particles in ceaseless motion and that it is

just as it is seen. The reason for this lack of consistency is, of course, complex. His particular problems bulk largest in the mind of the specialist. The fact of knowledge is more important to him than its exact nature and means of attainment. And, besides, if he is keen, he realizes that these basic problems are not easy and require a specialist to handle them.

While science begins with the outlook of common sense as regards perception and seldom reflectively breaks with it, it is forced more and more to substitute conception for perception. Atoms and molecules and electrons can only be conceived; they cannot be sensuously perceived. The scientist knows that knowledge about the physical world is not as easy a matter as the untrained man is apt to suppose. He is aware how many hypotheses have been constructed, only to be given up, and he more than suspects that the physical world as presented in many textbooks is as much myth as science. The old presentational assurance has departed. The problem of the nature and conditions of perception is ripe for formulation, and the scientist is aware that philosophy has busied itself with it for many centuries.

Summary.—The points made in this chapter should not be difficult to get clearly in mind. We have called the ordinary view of what perception is natural realism. Natural realism is not a theory so much as a set of beliefs combined with what perception seems to be as an experience. There are independent, permanent things which all can perceive, and perception is an event in which the individual is more or less active and in which things are given in his experience much as they are. He may not see all of the thing at once, nor perfectly, but it is the thing, itself, which is presented and open to his inspection. Philosophers have recognized this view of perception as an empirical fact even though their reflection has led them to doubt its adequacy and truth. And it is being taken as a point of departure for the theory of perception. If a careful study of the conditions and varying content of perception permits us to retain the essentials of

natural realism, it has the preference. But we must not forget that we have advanced in the process from an unsystematic outlook to a definite theory. However, many facts discovered by science in regard to the transmission of the stimulus which affects the sense-organs and in regard to the rôle played by the organism in perception suggest doubts as to the adequacy of natural realism. It has been left to philosophy to work these implications out in a systematic way. We shall now turn to the consideration of the difficulties confronting the ordinary view of perception.

REFERENCES

DEWEY, *Essays in Experimental Logic*, chap. 9.
FULLERTON, *An Introduction to Philosophy*, chap. 5.
HOERNLÉ, *Studies in Contemporary Metaphysics*, chap. 4.
RUSSELL, *The Problems of Philosophy*, chap. 1.
SELLARS, *Critical Realism*, chap. 1.
STOUT, *Manual of Psychology*, bk. 3, chap. 1.
JAMES, *Principles of Psychology*, Vol. 2, chap. 19.

It is, I think, quite essential that the student read the treatment of perception in some good text in psychology. I have suggested Stout, but Angell, Pillsbury, Titchener, Dunlap, Warren, or Woodworth are equally good.

CHAPTER IV

DOES NATURAL REALISM BREAK DOWN?

Difficulties Confronting Natural Realism.—We have pointed out that the outlook of all of us tends to be realistic. We observe things, and these particular things are *selections* from a vast field which we think of as there all the time. And let us also note that our feelings and our thoughts are also given or *experienced along with* the particular things we note. There is no sense of a peculiar boundary line between thoughts and things. They are both characteristic elements of experience, though with different meanings. Thoughts and feelings are regarded as less in the common, neutral space and as more private and bound up with the individual percipient. But our experience is composed of both kinds of elements. In short, we must be careful to observe that the traditional dualisms between mind and matter of which every one has heard so much have small relevance to the individual's field of experience as it is given. Mind and matter involve theories for the discussion of which we are not yet ready. For the present, all we wish to note is the kind of things which are given together in the individual's experience, the contents, as it were, of his experience. In external perception, we are noting what we regard as common, spatial things, *in* our experience temporarily by the act of perception, but not limited to it nor dependent upon it. The individual's attention is, as we say, drawn to them or directed to them.

Now reflection upon the mechanism of perception and upon the varying content of such external perception has led to the formulation of many difficulties in the way of longer acceptance of the view that the content given in experience is

literally a part of the object, its surface character; that physical things actually enter and leave consciousness. It is with the systematic examination of these difficulties that we shall be concerned in this chapter. Can these difficulties be met by natural realism without a fundamental change in its beliefs? Or does natural realism in some measure break down? I do not want to suggest too abrupt an antithesis here. Natural realism is a vague complex some of whose elements may be essentially correct while others need correction. It should not surprise us to find that the situation confronting the human mind is far more subtle than practical common sense supposes. Would it not be strange if it were otherwise?

Different groupings of the main objections to natural realism can and have been made. For our present purposes, the following points will suffice: (1) the fact that the content of perception seems to be a function of many processes both extra-organic and intra-organic; (2) the distinction between the physical thing and its appearances; (3) the lack of complete correspondent variation between things and what is presented; (4) the differences between the experiences of individuals perceiving what they regard as the same object; (5) the difficulty met with in explaining images, dream-life and memory on the basis of natural realism; (6) the synthetic or constructed character of the perceptual field. These points overlap but differences in the angle of approach make this variety valuable.

An important question of method arises here. Because of these difficulties confronting natural realism, many writers have swung entirely away from realism to what is called *idealism*. We must, I think, set our faces sternly against any such hasty step. We shall later see that philosophy took this hasty step for a while and has only in our own day returned to a reconsideration of realism.

Our first endeavor should be to remodel and develop natural realism under the pressure of the facts. We shall retain the hope that, in spite of critical reflection, the realistic mean-

ings of both common sense and science can be retained while a more adequate theory of perception and of knowledge—for much of knowledge is different from perception—can be substituted for the view that in perception the physical thing itself is given.

The Content of Perception a Function of Many Factors.—Let us speak of the various characters which we can note in external perception as data of perception. These data constitute together what we shall call the content of perception. Thus when I hold up a piece of chalk we can all note its color, its shape, its size, etc. To these more visual data we can add tactual data. These discriminated data are the empirical features of perception. Clearly, we do not see matter or energy but just characters of this sort. The modern philosopher is very much of an empiricist and wants to work upward from what is undeniably given.

In perception we seem to be intuiting an object in a sort of interpretative way. We must not forget this meaning or reference to an object. The psychologist may be satisfied to analyze the content of perception as a percept or synthetic complex of a fairly high level, but the epistemologist should never lose sight of the claim, or meaning, that we are concerned with objects, that objects appear or are apprehended.

Again, as we shall see, it was very common for earlier thinkers to speak of these data which constitute the content of perception as sensations. But this term involves a psychological theory as to their status which must be carefully examined. Just what are sensations? Are they simple mental entities? We shall see good reason to become skeptical of mental entities in any dualistic sense. And there is, likewise, no good reason to regard sensations as simple in any ultimate sense. It is best, then, just to be empiricists and take these characters as we can note them. Color and shape and weight are characters which we find ourselves assigning to things. We can speak of them as logical data. This piece of chalk is *white, small, light, smooth,* etc. But when we use

these terms we must not forget that in perception we have in mind specific shades and shapes and sizes. It is this peculiar shade of white, etc.

Now when we come to study these data of perception, we soon discover that they are relative to definite conditions. As these conditions vary, they vary. That is why I have spoken of them as functions—in a mathematical sense—of many factors. They seem to be conditioned in definite ways. Thus color is a function of the source of illumination, the condition of the atmosphere, the nature of the reflecting body, the structure of the eye, the nervous currents which arise in the brain, past training in color perception, etc. Modify any one of these factors, and we have good reason to believe that this datum of perception would change or disappear. We are able to gain this sort of knowledge of the conditions of our data, knowledge of the nature of empirical laws.

These conditions of the data of perception fall naturally into two groups, the extra-organic and the intra-organic. Physics and chemistry deal with the extra-organic group, that is, with the events and processes which lead up to the stimulation of the percipient organism, whereas physiology and psychology attempt to deal with the mechanism of perception as an activity of the organism. These conditions to which data are discovered to be relative are not given in the experience of any one perception. They are known only by comparative study. May it not be for this reason that perception is taken to be the intuition of an external object just as it is, a sort of looking out upon the absolute qualities of things? Knowledge in other fields often forces us to modify hasty conclusions.

The general facts are so well known that we need not go into them in detail. In the case of visual perception, there must be a stimulation of a distance-receptor, the eye. This stimulation involves the factors we enumerated above. The data we apprehend in the object are, accordingly, in some sense a function of external and internal processes which

can be studied. The data of hearing are relative in like manner. And so of the data which we correlate with the other sense-organs. Let us also note the direction of the processes which condition an act of perception. It is clearly from the physical object to the brain, while the attention involved in the act of perception seems to be from the organism to the object, that is, we feel outward-looking and adjust ourselves to the object which we are perceiving. This difference of direction of the causal process impinging on the organism as against the selective response of the organism is important. It should be noted that the first is unconscious, while the second is conscious. May it not be for this reason that we experience perception as an event in which we look at the object? The given datum is experienced with this sense of outward response. We shall have more to say of this later when we state our theory of perception.

Can these data of perception, which make up its content, be regarded as intrinsic qualities of external things as they seem to be? Or are they not qualities at all, that is, not literal features of things, but rather merely data which arise in the percipient organism under certain conditions and which are used by the organism in connection with its response to stimuli, thus giving the *illusion* that physical objects are actually *given* in experience? Reflection suggests that we may need to reclassify the data of perception and, at the same time, change our notion of what we mean by qualities of things. These two points are clearly going to develop together. *If the data of perception are not literal aspects of things, how can they be intrinsic, fixed qualities of things?* And, if so, can we hope to have the intrinsic qualities of things—if there are such of the sensuous type—open to direct observation? The nature of perception is promising to offer subtle and fascinating problems.

The Physical Thing and Its Appearance.—That a thing has a different appearance from different positions and under different conditions is a fact very commonly noted. Thus a

strip of cloth has one color in daylight and another color when the source of illumination is electricity; a coin has an elliptical shape when it is turned somewhat to one side and is round when looked at with its surface facing the observer. Everything seems to have this variety of appearances. How much a landscape changes as we approach it! And a house that seemed delightful at a distance both as regards shape and color may be quite altered upon a nearer approach. We could also refer to the problem of mirror-images in this connection. What is the relation between a thing and its appearance in a mirror? We connect the two for causal reasons and because of similarity in appearance, and yet we must admit their different location and the peculiar reversal which is characteristic of the image-object. Another example which has always attracted attention is the case of the straight stick which appears bent in water. We say that we know that it is straight because we can take it out of the water again and look at it. Even while it is in the water, we may test its shape by running our hands over it. Of course, science informs us that we should see it that way and explains why we do. Nevertheless, reflection forces us to distinguish between the real shape of the stick and its apparent shape.

Suppose that an individual walks away from a tree. The data of his perception gradually alter. The tree looks smaller, its branches seem closer together, its color changes from shade to shade, and this alteration of the appearance of the tree continues until it becomes a mere speck on the landscape. Here is a complex series of appearances considered as appearances of the same tree; and this series can be reversed in its order by walking back towards the tree. The query is, How can the tree have such a multitude of appearances? And is one appearance more truly the appearance than another? If we limit ourselves to the content of perception, can we select one shape, one size and one color as *the* size, *the* shape and *the* color of the tree? Is not any selection essentially practical in its motivation? To look at a very large object, I stand

quite a distance away from it; while I get close to a small object.

This way of approach to the study of perception brings out the varying content observed when we regard ourselves as seeing the same tree. Clearly our results harmonize with the suggestions made in the preceding section. The appearance is not an absolute, intrinsic character of the object, but is relative to conditions. To talk about the appearance of an object is an elliptical expression. We suppress the reference to the place of the observer in relation to the object, as well as much else such as external and internal factors. Only as these are given do we have something of the nature of a definite correlation. But we are now far from the vague outlook of common sense. The appearance of an object is a variable and cannot be attached to it as a possession.

But what are these complex data which we call appearances? Are they physical? Are they out there, as they seem to be, in a neutral space? If so, do they interact with the actual things with which science deals? Real houses are built by masons. Are the appearances of houses wraiths of these? But if appearances are non-physical, how am I able to pass from my intuition of them to my perception of the actual physical things without noticing any marked difference? Do I ever intuit anything but appearances?

The Lack of Correspondent Variation.—The third objection to the main thesis of natural realism rests upon facts similar to those which we have just been examining. The principle under which this further objection comes has been formulated as follows: "If anything X exhibits variations which are not shared by Y, X and Y must be distinct existences."

Now the content of perception, the datum given, the appearance of a thing varies from moment to moment as we walk away from it, while we have good reason to believe that the physical thing, itself, does not so vary. We believe that the table is square although we see it from this angle as possess-

ing obtuse and acute angles. Such is the situation so long as we accept the belief in external perdurable things changed only by the action upon them of definite forces. Experiment shows that the reason for the changes in appearance of things is often the position of the percipient. The appearance of a thing changes while the thing remains the same. Can, then, X be identical with Y? Must not a thing and its appearance be different realities?

Experience forces us to accept a still more basic variation. May not physical things have ceased to exist while we are perceiving what we ordinarily identify with them? Thus far we have stressed changes in position and the resultant modifications in the datum of perception. Let us now introduce the time element along with space. We are informed by astronomers, for example, that a star which we just now perceive may have been destroyed centuries ago, so long does it take light to travel to us through inter-stellar space. How, then, can we possibly identify the content we see with the star itself?

The Differences between the Perceptual Data of Individuals.—The next three arguments against natural realism stress the intra-organic factors, especially those which have commonly been called mental.

It is a commonplace that the datum of perception is partly determined by the percipient's interests and training. The artist will note shades of color hardly distinguishable by the untrained. The same is true for sounds, harmonies, flavors and odors. But can these different data exist at the same time as qualities of the object? Shall we say that the object is seen more truly by the artist than by the untrained observer? Perhaps that is so in a sense. And yet we have the problem of classifying the less true datum as not really out there, as false, subjective, or whatever term we wish to employ. And in the case of color-blindness what right have we to regard the normal eye as an instrument for the detection of the real color out there, while we hold that the other eye gives some-

thing subjective? Or shall we hold that the object is both grey and red at the same time? Clearly the nature of the percipient makes a great difference in what is perceived. The psychologist is convinced that what is seen is largely dependent upon what we expect to see; and what we expect to see is a function of what we have experienced in the past. But the past introduces the personal history of the individual, which is always more or less unique.

The situation is this: If the datum of perception varies from individual to individual, how is it possible to select one datum as the intrinsic nature of the object? If perception is an event in which the object is given to inspection, we would be compelled to maintain that these individuals saw more or less similar things and not the same thing.

Can Natural Realism Account for Memory?—If perception is an event in which the thing is given, how shall we account for our memory of it when it is no longer present or even existent? Common sense hesitates here and is inclined to admit that images are subjective and not physical things. But whence do these images come if perception is merely a givenness of the object? It is much easier to understand images if we regard them, as does the psychologist, as genetically connected with the datum of perception. If the image is mental may it not be because the datum of perception is likewise mental? And if the datum of perception is external may not the image be likewise material? They do not seem to differ so markedly that one can be given externality and independence of the observer while the other is denied it. Certainly our images are like our perceptual data.

Now I think that it is undeniable that we tend to think of images and ideas as personal and in some sense mental. It is probable that we have no very clear notion at first of what we should mean by mental. We know that our sense-organ must be stimulated when we perceive things, while this is unnecessary for images and thoughts of things. Also images and thoughts are more under our control than are

things. We do not lift images and thoughts or break them in pieces and modify them in that way. In some sense, we can carry them around with us and recall them at will. They have an intangible character and are not common.

But do not data of perception have this same intangible character as soon as we distinguish them from things and regard them as appearances? It is the thing we touch and break in pieces and not its appearance to us. The similarity between the datum of perception and the datum of memory now suggests that both are internal and are somehow bound up with the individual who is perceiving and remembering.

Reflecting upon these facts and difficulties, enlightened common sense has swung more and more to the conclusion that the data which we observe are internal and are bound up with conditioned responses in the individual. It is true that it easily falls back into natural realism and seems to perceive the qualified surface of things. But this only means that it has been unable to think the new tendency through into a stable and satisfactory outlook. We are now more than ever convinced that common sense has no systematic view of things and that many problems lurk in the background.

The Field of Perception Involves Construction.—The logician and the psychologist have studied perception intensively and have come to agree fairly well on certain points. Thus they both affirm that there is much interpretation and construction in perception. A few quotations may make this point clearer. "The results of all the various experiences cooperate in giving the object that is seen the appearance it has. To put it the other way, the object that is seen is the one that serves to explain the earlier experiences; it is the one that harmonizes all of the uses and observations of it in the past. By constant trial and use, a construction develops that proves true when tested in any way. This is accepted as the real object as opposed to mere sensations. Whenever the sensation presents itself, this developed object

arises in consciousness."[1] William James always stoutly protested against the view that percepts are merely clusters of units called sensations, and it would seem that psychologists are increasingly agreeing with him. There is an organization of tendencies at work, and what we see is a resultant. "A pure sensation is an abstraction."

It should also be noted that we can readily distinguish between the apprehension of a sensory datum and the developed intuition of what we call things. Thus on a Sunday morning I hear a sound outside my front door and say that the morning paper has come. The sound is discriminated, recognized, and interpreted. It *means* the dropping of a newspaper on the step. How easily the mind passes from sign to thing signified. There is complication, fusion, interpretation. Strictly speaking, concepts enter in from past experience. The experience of a thing is, therefore, a very complex process. Motor tendencies, expectations, fusions, concepts, all blend in a typical experience. Logicians are affirming this fact when they assert that a perception involves judgment. When I look out of a window and see a person passing, how much of my experience expresses knowledge which I have gradually gained! Our abilities are achievements.

It would seem to follow from this that the presentation of things rests upon many integrated processes. The unit of cognition is something richer than sensation. Writes Dr. Eaton: "The cognitive unit, a presentation, is therefore complex. It includes a concept (and often a belief) as well as sensations. If I gaze from my window at the trees bending in the wind, there is much more in my mind than impressions of color, movement, shape, and relative position. I see the trees. My mind leaps beyond sensations to concepts—concepts of solid three-dimensional objects of a certain nature. The fusion of concepts and sensations is the presentation of the object, and neither concepts nor sensations by themselves would give the peculiar kind of cognition I call 'presenta-

[1] Pillsbury, *Essentials of Psychology*, p. 159.

tion.'''[1] Similar views have been expressed by Dewey, Stout, James Ward, Bosanquet and others; and appear to correspond to the facts of perception.

We may conclude that the perception, or intuition, of objects is not the simple and immediate act it seems to be to the individual interested only in action and results. *What* we see is in some sense a construct expressing stimulation and complicated response. *And yet we all believe that we see an independent object.* Here is the paradox which theory of knowledge must puzzle over.

The Psycho-Physiological Theory of Perception.—A very good way to gather together the various arguments which have been employed against natural realism is to connect them with the psycho-physiological theory of perception. According to this dominant theory, the sense-organs must be stimulated before a veridical or true perception arises. This excitation is transmitted to the cortex, and only then does there arise what is called by the psychologists a percept and by common sense the appearance of a physical thing. The percept seems to be of the nature of a response into which the higher nervous processes enter. Thus the content perceived is connected with the end-term of a complex causal process whose direction is from the object to the organism. How, then, can this content be identified with the physical object which is part of the beginning of this causal process? How can the percept which arises in the individual's experience when he is looking at a star be identified with the star? This theory seems well based and to work definitely against natural realism.

But we must point out a certain inadequacy in this view as a theory of perception. It calls attention to the processes underlying and conditioning perception, but it does not analyze the perceptual experience itself. Let us look at perception from the inside again and try to see why it is taken to be the awareness of things. Why is it that the

[1] R. M. Eaton, *Symbolism and Truth*, p. 15.

datum of perception is taken to be the colored surface and outline of independent perdurable things?

We should note that the datum has a spatial character and that it also has a visual locus in the third dimension. It has a place in relation to other data. This one appearance of a tree is given as before or to one side of the appearance of another tree; and the appearance of the individual's body changes position in relation to these other data of perception. As we walk up to one of these visual data we encounter resistance and add to the datum the new elements of touch and muscular effort. I do not think that it is difficult to realize how soon *from within experience itself* the characteristic meanings and beliefs of natural realism develop and how readily the complex datum of perception is regarded as the colored, hard surface of an independent, permanent thing which has capacities and can affect other things in definite ways. The field of the individual's experience has an internal structure in which the actions of looking and walking are set over against a visual datum having a definite visual place in the third dimension. Attention is a felt direction toward these appearances from which good and evil come. No wonder that perception seems to be an event in which sensible things are given to observation! Sensible appearances have acquired meanings of a realistic sort. The psycho-physiological theory of the mechanism of perception should be supplemented by this analysis of the internal structure of perception which, by means of visual localization, enables the individual to seem to look, in the reverse direction from the causal, outward to things.

Conclusions.—This brief examination of the inadequacies and difficulties facing natural realism raises many questions. It is surely evident by now that serious and prolonged reflection cannot be escaped. He who has gone thus far can hardly turn back. Perception cannot be an event in which physical things are literally given in experience. That which is given is a datum which has a visual place and has ac-

quired meanings until it seems to be the very colored and tangible surface of a perdurable thing. But the data of perception are functions of many conditions and cannot be regarded as intrinsic qualities of things as they are at first naïvely taken to be. There is good reason to consider them mental, though we must not be too hasty in our classification and we must be certain that we have clear ideas of what the mental is.

Another point must be noted. Because the interpretation of perception characteristic of natural realism breaks down, must we relinquish those realistic meanings and beliefs which we find in experience? It does not at all follow. When we examine the movement of reflection as directed upon perception we soon note that the physical thing, while no longer held to be open to a bare act of awareness, is assumed to be one of the conditions of that which is given, *viz.*—the content of perception. Clearly, the object of our perception is still regarded as just as real as ourselves. We have emphasized the causal, or existential, condition of perceptual knowledge, which is an organism stimulated by, and responding to, an object. It is this *foundation of perception* which is emphasized by the psycho-physiological theory of perception. But we must not be so impressed by this knowledge of the existential basis of perception as to forget that *in the individual's experience, or consciousness, perception is an elementary act of cognition.* What our analysis should lead us to do is to move from the first naïve assumption that perception is the givenness of the object to the view that perception is an interpretation of the object in terms of assigned characters. So automatic is this interpretation and so conditioned by the object that we often say that the object appears, or reveals itself, in perception. We are dominated by a sense of an object.

There is good reason to believe, then, that a theory of knowledge can be developed that will do justice to these realistic meanings and beliefs and yet not be open to the

objections which proved fatal to natural realism. But it took philosophy a very long time to master this situation. In what is called representative realism the causal foundation obscured cognition and led to the view that we know ideas first and not things, instead of the true position that we know things by means of, and in terms of, ideas. This representative realism was also distorted by what is called Cartesian dualism, a dualism between two substances called, respectively, mind and matter. The weakness of this type of representative realism led to the rise of idealism. We may say that philosophy became perplexed but increasingly mastered its material by advances in psychology and logic and by the aid of corresponding developments in science until the field was ripe for a new advance in our own day. To this advance, idealism, pragmatism and realism have all contributed, each criticizing the others and preventing immature conclusions. In the succeeding pages, we shall find out what all these movements have stood for.

In the present chapter, I have in a measure set my face against that form of modern realism which seeks to defend and develop naïve, or natural, realism. I have tried to show why I think that natural realism breaks down. It does not seem to me to understand the nature of perception, nor does it seem to me able to account for illusions. No one has made greater effort to defend natural realism than Professor Alexander. His ingenuity is astonishing. He is beyond question one of our great thinkers. And yet it seems to me that his position is based on the assumption that a form of realism which distinguishes between the content of perception and the object of perception and which thinks of perception as the interpretation of the object in terms of this content cannot be carried through. Let me quote a passage: "I cannot help confessing here how much simpler it would be and how much laborious explanation it would save, if only it were true that our intuitions and sensations were mental as is commonly supposed, and how easy it is compared with

our procedure to refer all these variations in part to the mind or its body."[1]

The history of modern philosophy presents us with the efforts of the human mind to break loose from naïve realism and still retain a belief in a physical world not too different from that which seems revealed in perception and in science. To follow this movement will give the student a perspective he can secure in no other way. He will see that, in idealism, this belief wavered and was even submerged. Let me suggest, again, that two clues will be of assistance: first, that it took a long time for thinkers to distinguish between the existential foundation of cognition and cognition itself; and, second, that the Cartesian dualism—which we shall study—between mind and matter as two distinct substances made the first shortcoming fatal. We shall now betake ourselves to a study of the most influential historical systems of modern times.

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CHAPTER V

EARLY REPRESENTATIVE REALISM

The Value of an Historical Approach.—The human mind moves forward very slowly and, as it were, one step at a time. Indeed, if the step taken forward is unusually long, it is succeeded by a short step backward. Even slightly novel ideas must be assimilated and their implications worked out and reacted to. To those who come long after, the advance made by any period may not seem very great. But it is by means of such hesitating steps that the modern view of the world has been achieved, or, had I better say, is in process of being achieved.

Now to a certain extent the individual mind tends to travel—though more rapidly—the same path that the race has traversed. And the individual who has seriously undertaken the task of philosophizing will usually find that many of the positions which suggest themselves to him have already been examined by past thinkers. Their interpretations will probably not completely satisfy him; and yet what extremely able men have so carefully done cannot fail to be of assistance. This is one reason why an introduction to philosophy must give some attention to significant epochs in the history of philosophy.

The seventeenth century witnessed the vigorous beginning of modern philosophy. New trends of thought and new principles of explanation, begun during the Renaissance, had found sufficient encouragement in observation and experiment to awaken interest and even confidence. The result was that systems of philosophy arose to interpret both the spirit and the general implications of this growing movement. It is

in a way invidious to select from the many able thinkers of the seventeenth and eighteenth centuries a few for special consideration. And yet since we intend to subordinate the history of philosophy to the analysis of philosophical problems, it seems best to present the main ideas of Descartes, Locke, Berkeley, Hume and Kant. *We shall take Descartes and Locke as typical of a combination of dualism in ontology and representative realism in theory of knowledge.* Both accepted the traditional distinction between matter and spirit and thought of knowledge as demanding *ideas* in some sense distinct from their objects. In Berkeley's earlier writings at least, we find a form of idealism developed which has been very influential. He attacks the teachings of both Locke and Descartes. Hume is the critical skeptic who points out flaws and weaknesses in all these positions but does not claim to offer any positive doctrine to take their place. Kant sums up this movement and attempts to make a fresh start.

With, perhaps, the exception of Kant, these writers stated their own conclusions so clearly and unambiguously that no better introduction to philosophical problems than their writings can be found. We shall try to benefit by their analyses. And yet we shall try to find their mistakes, for mistakes they undoubtedly made. The whole movement is especially suggestive because these thinkers, as they follow one another, arrive at a deeper insight into the problems.

Cartesianism.—Descartes is usually spoken of as the "father of modern philosophy." The reason for this eulogistic designation is that he formulated in a sharp and even drastic way the problems with which modern philosophy has busied itself. He begins with a dualism between mind and matter, an assumption characteristic of Western thought since the days of St. Augustine, and makes this contrast between the material and the spiritual more extreme than ever before. They become for him absolute opposites which have nothing in common. But it is by mind that we know. And what is given to our awareness is our own mental states.

We can know physical things only by means of these direct objects of our thought. Only so far as these *represent* the physical world can we know it. Such is the general position adopted by Descartes. To realize to the full the character of his teaching, we should further note that matter is essentially identified with extension or space, as this is conceived in mathematics, and that conception is sharply distinguished from sense and imagination. Let us examine these points in more detail.

Descartes is convinced that the physical world is completely alien to the spiritual or mental. No matter what change a bit of matter may undergo it cannot be transformed and pass into something else of an immaterial kind. Mind and matter are fundamentally different. The essence of the one is extension, that of the other consciousness. Matter is homogeneous, passive, divisible into parts. Mind is active, unitary, replete with content. It cannot be said that he proves this dualism. Rather does he take his departure from it and seek to justify it.

This dualism of mind and matter led to difficulties in regard to the problem of how mind and body are related. Logically, Descartes would have to maintain that there is no genuine relation, that sensations are not produced in the mind by means of changes in the body and that volitions do not actually affect the body and lead to specific types of behavior. But this extreme position was repugnant to him and he taught that the soul was somehow connected with the pineal gland of the brain and there received stimuli and directed the nervous currents. This compromise position shows how impossible such an extreme dualism is, into how many puzzles it leads us. Descartes is forced to contradict himself again and again. How can a non-spatial thing be in space to the extent of being influenced and affected by bodily changes? And how can such an immaterial thing induce bodily changes in its turn? The effort to overcome this sharp dualism has motivated much of modern thought. We shall

go into the problem in detail toward the end of the book and attempt to show that there is no need to begin with a dualism of the Cartesian type.

Let us next consider the situation in regard to mind. It is here that we find the centre of gravity of his theory of knowledge. By the method of systematic and forced doubt, he seeks to show that the mind is something certain and indubitable. All external things, he maintains, can be doubted. The senses deceive us while we are awake, and we find it hard to discover definite marks by which to distinguish waking from sleeping states. "I shall suppose, then," he writes, "not that God, who is very good and the sovereign source of truth, but that a certain evil genius, no less wily and deceitful than powerful, has employed all his ingenuity to deceive me. I shall think that the heavens, the air, the earth, colors, figures, sounds, and all other external things, are nothing but illusions and idle fancies which he employs to impose upon my credulity. I shall consider myself as having no hands, no eyes, no flesh, no blood, as having no senses, but, as believing falsely that I possess all these things." But, he concludes, there is one thing that I cannot doubt, that is ultimate, and that is that I think. I think, therefore, I am. Even the most radical doubt involves a doubting. Thus Descartes is left with the reality of thoughts of all kinds, sensations, images, volitions, ideas. Thus Descartes believes that he has found something basic and indubitable upon which to build.

But what is the self, soul, mind or I which Descartes assumes at this point? As Hume argues later, it should be only the *thoughts* which are experienced. These, alone, are empirical. As a matter of fact, however, Descartes assumes a soul or mind or self which *has* these thoughts. Yet if it has these thoughts or is aware of them, it must be in some fashion distinct from them. How, then, is it known? Descartes never answered this question clearly.

The position arrived at is this: We have direct and im-

mediate knowledge of thoughts connected with the mind. Some of these thoughts claim to represent material things external to the mind, but we have, as yet, no guaranty that their claim is true. Our minds seem isolated from things and shut up in themselves. Is there any way to judge these claims? At this stage, in a typically scholastic way, Descartes argues to the existence of a God who is perfect and will not deceive us. Having proven God, he obtains from him the guaranty he desires. "But after I have recognized the existence of a God, and because I have at the same time recognized the fact that all things depend upon him, and that he is no deceiver, and in consequence of that I have judged *that all I conceive clearly and distinctly cannot fail to be true* . . . no opposing reason can be brought against me which shall make me ever call it in question; and thus I have a true and certain knowledge of it." Thus Descartes has to prove the existence of God before he can prove the existence and nature of the things around us.

Let us now examine his view of representation and his separation of sense and imagination from conception.

We clothe things with sensuous qualities, but these are changeable and come and go while the material things remain. They cannot, therefore, constitute what is essential to the external object. Moreover, sensuous qualities are obscure and indistinct because we cannot comprehend how they are possessed by the object. On the contrary, the thought of things as extended is clear and distinct. This idea is, therefore, a true representation of the nature of physical things. This rejection of sense and acceptance of mathematical concepts is clearly present in a famous passage in the Third Meditation: "I find in myself two ideas of the sun quite different: the one has its origin in the senses, and is to be put in the class of those which come from without (that is, through sense); by which it appears to me extremely small; the other is drawn from astronomical considerations, that is to say, from certain notions born with me,

or at least formed by myself, in whatever way that may be; by which it appears to me many times greater than the whole earth. Certainly these two ideas which I conceive of the sun cannot both be like the sun; and reason makes me believe that that which comes immediately from its appearance in sense is the one which least resembles it." This opposition of an abrupt type between perception and conception must be held in mind. It is characteristic of what is called *rationalism*. How are concepts achieved? What are their logical relations to the data of observation? We shall see that Locke tried to break down this sharp contrast between sense and reason but was not consistent in his position. Some historians of philosophy have held that the Copernican theory of the solar system, so opposed in a way to what we perceive when we look up into the heavens, encouraged this excessive rationalism. Undoubtedly the rise of mathematics and the mechanical theory of nature had much to do with it. The connection between perception and conception was not understood, and they tended to fall apart into two mental realms having little commerce with each other. It is for this reason that we must call Descartes' position *rationalistic representative realism*. As one student of Descartes puts it, "Our sense-images are but pictures in our minds, and do not represent, but misrepresent, the true nature of the real. There are two external worlds, the one rich with its bright variety of diverse qualities, appearing to the 'senses,' the other, poverty-stricken, constituted only of matter and motion, and discovered by the understanding." [1]

In conclusion, let us note the outstanding features of this philosophy. It is clearly dominated by a metaphysical dualism between two substances called mind and matter. The knower is shut up in mind and needs some guaranty that certain of his ideas are true of the material world. And if the knower is in a very real sense limited to his ideas and needs some supernatural sanction before he can have any

[1] Norman Smith, *Studies in the Cartesian Philosophy*, pp. 16-17.

assurance that there is an external world and that his ideas reveal it, is not knowledge in a precarious situation? Representative realism is obviously handicapped by this artificial metaphysical setting.

Locke.—The English thinker, Locke, continued the enquiry begun by Descartes. There is no doubt that he was very much influenced by Descartes. He, also, was a metaphysical dualist regarding matter as distinct from mind. But Locke is more aware of the difficulties and is more of a skeptic than Descartes. He even hazards the suggestion that God might have superadded to matter a faculty of thinking. We know so little of substance that we can see no reason why there should be two rather than one. On the whole, Locke is more of an empiricist than Descartes and seeks to lessen the gulf between sense and reason.

Locke's purpose was "to inquire into the original, certainty and extent of human knowledge, together with the grounds and degrees of belief, opinion and assent." Knowledge, he teaches, is conversant about ideas. "Since the mind, in all its thoughts and reasonings, hath no other immediate object but its own ideas, which it alone does or can contemplate, it is evident that our knowledge is only conversant about them." And here we have the famous definition of knowledge which seems to make knowledge of an external world impossible, viz.—that it seems to be nothing but the perception of the connection of and agreement or disagreement and repugnancy of any of our ideas.

Locke defines an *idea* in very general terms. It is whatsoever is the object of the understanding when a man thinks. Sensations, images, concepts are all ideas. What are the sources of these ideas? There are two sources, the stimulation of the sense-organs is one source, and the perception of the operations of the mind the other. Locke does not look upon the mind as passive but as busying itself with ideas. His conception of the mind is, however, very vague. On the whole, it is something which lies back of the ideas, oper-

ates upon them, and possesses them. The soul begins to have ideas when it begins to perceive.

Ideas are simple or complex. The ideas which have their source in the senses are at first simple and unmixed. Color is different from sound and both from fragrance. In like manner, simple ideas of reflection are gained by introspection. These two kinds of simple ideas furnish the materials of all our knowledge. Out of them mixed or complex ideas are formed. There are three kinds of complex ideas: modes, substances, and relations. Modes are those complex ideas which, however compounded, contain not in them the supposition of subsisting by themselves, but are considered as dependences on, or affections of, substances; such are the ideas signified by the words triangle, gratitude, murder, etc. The ideas of substances are such combinations of simple ideas as are taken to represent distinct particular things subsisting by themselves, in which the supposed or confused idea of substance, such as it is, is always the first and chief. Locke's idea of substance is peculiar and interesting. There is more of the agnostic element in his thought of substance than in Descartes'. It is something, I know not what, in which qualities inhere or which supports them. Relations are obtained by comparing one idea with another.

Now I think that we must pass some criticisms upon Locke's doctrines. Are ideas as simple and distinct as Locke supposes? It is clear that he neglects the spatial and temporal matrix in which color and sound are perceived. His manifold of sensations had vicious consequences in philosophy for it led to a sort of mental atomism which regarded relations as fictions. Does the mind create new ideas or is it limited to a fixed number which it must add together and arrange in various ways? How about relations? Is not the idea of similarity or of difference a new idea? What are the conditions of ideas? Must not the mind respond in an analytic way to the stimulus coming through the sense-organs before we note clear sense-data? In short, Locke

merely began the study which logic and psychology have since been carrying on. So much for Locke's view of experience.

Were we able to go into the details, we could show how puzzled Locke was about the whole problem he had raised. Experience is like a small spot of light in the midst of impenetrable darkness. We do not really know what material substance is, nor what spiritual substance is. And yet Locke is certain that there is an external world. "I think nobody can, in earnest, be so skeptical as to be uncertain of the existence of those things which he sees and feels." In the following passage, Locke indicates why he is so certain that the physical world exists and his reasons certainly appeal to all of us: "Thus I see, whilst I write this, I can change the appearance of the paper, and by designing the letters tell beforehand what new idea it shall exhibit the very next moment, by barely drawing my pen over it, which will neither appear (let me fancy as much as I will), if my hand stands still, or though I move my pen, if my eyes be shut; nor, when those characters are once made on the paper, can I choose afterward but see them as they are; that is, have the ideas of such letters as I have made. Whence it is manifest, that they are not barely the sport and play of my own imagination, when I find that the characters that were made at the pleasure of my thought do not obey them; nor yet cease to be, whenever I shall fancy it; but continue to affect the senses constantly and regularly, according to the figures I made them."[1] But the problem for a thinker is to work out a system which will justify and explain his beliefs. Let us now consider some of Locke's characteristic doctrines.

Like Descartes', Locke's view of knowledge is usually called *representative perception.* He admits that our assurance that there are things existing beyond consciousness cannot reach demonstration. "Yet it is an assurance that deserves the name of knowledge." It is a confidence or faith that

[1] *Essay Concerning the Human Understanding*, Bk. 4, chap. 11, sec. 7.

has a good basis in experience. I think that this point is well taken. We shall have something to say about it when we come to develop our own position.

Like Descartes, he rejects the secondary qualities as subjective. In this both followed Galileo and the scientific trend of the time. Only those ideas of ours which are used by physics are primary and significant for nature. And even here Locke is uncertain what position to take. Sometimes he speaks as though the primary qualities, solidity, extension, figure, motion, rest, number, were the physical thing, as Descartes thinks of extension as being matter; sometimes, he thinks of matter as being something unknowable which both produces primary ideas and supports primary qualities corresponding to these ideas. Thus his view of scientific knowledge is that it is a *copy* of the actual qualities of physical things. "I say, then, that to have ideas of substances which by being conformable to things, may afford us real knowledge, it is not enough, as in modes, to put together such ideas as have no inconsistence, though they did never before so exist. . . . But our ideas of substance, being supposed copies, and referred to archetypes without us, must still be taken from something that does or has existed; they must not consist of ideas put together at the pleasure of our thoughts without any real pattern they were taken from, though we can perceive no inconsistence in such a combination." In other words, the properties which we assign to a particular physical substance must have been found to co-exist. Such co-existence is discovered. Thus the chemist works out the properties of various chemical substances in this fashion. "And our ideas, being thus true, though not perhaps very exact copies, are yet the subjects of real (so far as we have any) knowledge of them: which, as has been already showed, will not be found to reach very far; but so far as it does, it will still be real knowledge."

Students of Locke point out the conflict between this view of real knowledge and his definition of knowledge which seems

to confine it to relations between ideas. Another point must be noted. Locke is still under the scholastic ideal of grasping the *real essence* of a thing, that is, something unique for each thing and independent of its relations to other things. *He does not stress measurements and causal laws.* He swings between a vague empiricism of a Baconian type, which notes particular instances, and Cartesian rationalism. The logic of scientific thought had not been worked out as yet. It is seldom easy to make out just what an idea is for Locke. Psychology is mingled with logic. It is clear that much remained for analysis. Unfortunately, Locke's vaguenesses and inconsistencies laid representative realism open to attack. It is hardly too much to say that it is only now beginning to recover from the associations which were then attached to it.

Doubts concerning Representative Perception.—On the whole, Locke stated his position mildly and undogmatically He was even emphatic in his assertions in regard to our ignorance of either material or spiritual substance. Let us now glance at a typical objection to his realism. "How do we *know* that, corresponding to our ideas, there are material things, if we have never perceived in any single instance, a material thing? And the doubt here suggested may be reinforced by the reflection that the very expression "a material thing" ought to be meaningless to a man who, having never had experience of one, is compelled to *represent* it by the aid of something so different from it as ideas are supposed to be. Can material things really be to such a creature anything more than some complex of ideas?"[1]

Let us recall the description of ordinary experience which we made in an earlier chapter. What features of our experience led to the development of those realistic meanings and distinctions upon which we laid so much stress, such as independence, permanence, commonness, changing appearance? And was Locke right to regard perception as merely the pres-

[1] Fullerton, *An Introduction to Philosophy*, p. 166.

ence of ideas to the understanding? Is not perception an act involving both body and mind? Do we not have here the unfortunate effect of the Cartesian dualism? Again, is knowledge the same as the substitution of one thing for another? It is clear that the nature of the knowledge-claim must be analyzed. But it seems to me that, because we can think of a material thing *only in terms of our knowledge of it*, it does not follow that we cannot think of it.

Many have felt the force of this doubt that ideas are *like* things. Are not ideas sensations which are effects in us? And need effects be like their causes? Those who approach the problem from the standpoint of the psycho-physiological theory of perception state it in this fashion: Ideas are looked upon as effects and the validity of knowledge is thought of as the question whether the one thing, the mental effect, is like the other thing, the physical thing. We shall have much to say of this interpretation of knowledge when we come to our own constructive formulation and interpretation of knowledge. In this place, let us note that the Cartesian dualism stressed the difference between ideas as mental states and objects as material. *As mere existents* they could not be like each other. Berkeley saw this point and emphasized it.

It may be interesting in this connection to call attention to one way out of the difficulty called the sign-theory. May not sensations be used as signs of things and not as copies? In the famous *Physiological Optics*, Helmholtz wrote as follows: "In so far as the quality of our sensation indicates to us the peculiarity of the external influence through which it is aroused, it can stand as an indication but not as a copy of it. . . . An indication need be in no way similar to that which it indicates. The relation between the two reduces itself to this: that a similar object, coming into action under similar circumstances, calls up a similar indication. We call our ideas of the external world true, when they give us sufficient information about the consequences of our actions

throughout the external world, and bring us to proper conclusions regarding its expected changes." This is an interesting suggestion though it needs much working out. What sort of information about nature can be arrived at by a systematic study of the clues given by our sense-data? And we should note the *order*, spatial and temporal, of our data as well as what Helmholtz calls the *quality*.

It is not a far step from representative perception, with its dualism and its view of knowledge as indirect, to idealism. The weaknesses of this type of representative realism were mercilessly exposed. It is in this that the value of Berkeley's thought lies. He who would defend representative realism to-day must rebuild it from the ground upward by a new analysis of human experience and by a more adequate interpretation of the content and logical foundation of scientific knowledge.

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The student will find good summaries of Locke's position and of Descartes' in the histories of philosophy. Höffding, Rogers, Sorley and Thilly are satisfactory.

CHAPTER VI

THE RISE OF IDEALISM

What Idealism Is.—The term idealism has had many different meanings in philosophy, and this variety has led to confusion. Thus we must distinguish between ethical idealism, which is a moral quality not exclusively possessed by any one school, metaphysical idealism or spiritualism, which is an ontological theory opposed to materialism, and epistemological idealism, which is a technical position in theory of knowledge. What we shall seek to do at this point is to take epistemological idealism and connect it with the teachings of Berkeley. Much of metaphysical idealism, or spiritualism, has depended upon the theory of knowledge developed by Berkeley and, consequently, his arguments deserve careful consideration.

The cardinal principle of idealism is that *being is dependent upon knowing.* Berkeley stressed perception and formulated this principle in corresponding terms as *to be is to be perceived.* Berkeley's idealism is directed against the representative realism of Descartes and Locke. It is a denial of the meaningfulness of a material world of the kind postulated by them, a world of substances alien to, and entirely unconnected with, the *ideas* of a spiritual self or soul, ideas which, alone, are given to inspection. Thus he agrees with these thinkers as to what is immediately given in experience but maintains that we have no good reason to believe in a material world which can only be *inferred.* Thus his idealism is a denial of the existence of a material world and the assertion that spirits and their ideas, alone, exist. On its positive side, it may be described as *mentalism.* It is often spoken of

as subjective idealism. Nothing exists but spirits and the objects of their perception and imagination, which are inseparable from them and have no independent existence.

Berkeley's Position.—Berkeley agrees with Locke and Descartes in rejecting natural realism. Instead of taking the content of perception as in some measure an interpretation of an independent object, he takes it as an idea given to the perceiving self. In other words, he takes it as a mere content apart from its use in knowing. An idea, so taken, is the object of perception. And these objects are sensible things analyzable into unit elements such as color, shape, roughness, odor, etc.

There can be no doubt that Berkeley shows great acuteness against common sense. We have, in fact, adopted and developed many of his arguments against the view that the physical thing is, itself, literally given in consciousness. Nevertheless, we do not think that any of this group of thinkers did justice to perception. Instead of taking ideas as elements in an act of perceptual cognition, they took them as the direct objects of cognition. This way of taking them fitted into the ontological, Cartesian dualism of two distinct substances with which they began their thinking. The modern thinker, on the contrary, does not begin in this fashion. Perceiving and thinking are for him acts of an intelligent organism. If he is led to distinguish between subjective contents and objects in perception, he does not jump immediately to the conclusion that the organism cannot include these contents in a totally natural and non-dualistic way.

We have been led to put so much stress upon this difference of outlook because it will play such a rôle in our argument. Often Berkeley misunderstands cognition and wants to identify it with *identity of stuff* as between idea and object. But this will become clearer as we proceed. There is, in fact, no better introduction to theory of knowledge than a critical examination of this historical movement.

It is well for us to bear in mind, then, that there are two

stages to note. The first stage consists of the effort to prove that the data we note in perception are really complexes of sensations or elementary ideas. In the *Principles of Human Knowledge* he adopts the terminology made familiar by Descartes and Locke and speaks of these objects of awareness as ideas. In the *Three Dialogues between Hylas and Philonous,* he calls these immediate objects sensible things. His thesis is that sensible things cannot exist by themselves, as we ordinarily suppose that they do, and that they cannot therefore be material realities. The arguments of our third chapter have prepared us for this view; and, as we have already seen, Descartes and Locke had already broken with natural realism.

The second stage of his thought consists of an attack upon material substance and upon representative perception. He attempts to show the absurdity of Locke's idea of substance and to demonstrate the impossibility of carrying through the theory that ideas can *resemble* that which is material. It is this feature of his philosophy which demands special consideration, for, as a result of it, he constructs a spiritualistic metaphysics. Locke and Descartes, it will be remembered, assumed two kinds of substances, matter and spirit. Berkeley rejects the one but accepts the other.

The First Stage.—When we brush away certain technicalities inherited from his predecessors, Berkeley's arguments against natural realism are of two kinds. He attempts to prove that the data we perceive, or are conscious of, are a function of the senses and are not substantial enough to exist by themselves. They are, as we have argued, conditional upon bodily factors. He seems even to go further than this and to assert that we apprehend a relation between the self and these data which makes it clear that sensible things are adjectives of the self. To be is to be perceived. In the second place, he seeks to prove that the qualitative data of which we are aware in perception are bound up with elements like pleasure and pain which he regards as avowedly mental or

elements within consciousness. Unfortunately, many of his terms are insufficiently defined and we are left in doubt as to what the senses are and what the exact nature of "being perceived" is. As we shall see, his positive doctrine is that ideas are created in the finite mind by God and are there perceived. But is not this self, mind, spirit, or soul, to which he appeals so confidently, a postulate or theory rather than an element in experience? It is true that he asserts that we have a *notion* of it. But what is the basis of this notion? Here he left a problem for his successors to examine. He seems to have retained traditional views in regard to the self or soul or mind. Let us give Berkeley's contention in his own words: "I do not pretend to be a setter-up of new notions. My endeavors tend only to unite and place in a clearer light that truth which was before shared between the vulgar and the philosophers . . . the former being of opinion that those things they immediately perceive are the real things, and the latter that the things immediately perceived are ideas which exist only in the mind. Which two notions put together do, in effect, constitute the substance of what I advance." Real things are perceived and are ideas inseparable from minds.

Berkeley's Attack upon Representative Perception.—But the ordinary man is not easily persuaded that the objects he perceives are mental ideas nor was the Cartesian or the Lockian convinced that it is the physical thing that is perceived. As a matter of fact, Berkeley joined hands with Locke and Descartes against natural realism, and then parted with them on the question of an *inferred*, substantial world. It is to this second stage that we now turn.

Locke taught that the objects of the understanding or, as we would say now, of attention are distinct ideas. Thus color is an idea, so is a particular shape, so is a particular tactual datum. Let us not raise the question here of the psychophysiological basis and status of such data. Both Locke and Berkeley thought of them as mental because they were sup-

posed to be elements in the mind as a spiritual reality. That is, we have the influence of a metaphysical theory, the postulated distinctness of mind and body. But to-day we do not begin with Cartesian dualism. In fact, as we shall see later, the movement of thought to-day is towards the identity of mind with the organism. Now the prime basis of Berkeley's criticism of Locke's representative perception lies in his denial that mental ideas can be *like* anything without the mind. This point is very important because many contemporary thinkers have turned back to natural realism because of their belief that Berkeley's refutation of representative realism was unanswerable.

In what follows let us remember that we are not trying to defend Locke's formulation of representative realism. Instead, we are seeking to understand Berkeley's outlook.

In the *Three Dialogues,* Berkeley undertakes to show the absurdity of the Lockian copy-theory. "*Philonous.* But neither is this all. Which are material objects in themselves—perceptible or imperceptible? *Hylas.* Properly and immediately nothing can be perceived but idea. All material things, therefore, are in themselves insensible, and to be perceived only by our ideas. *Philonous.* Ideas then are sensible, and their archetypes or originals insensible? *Hylas.* Right. *Philonous.* But how can that which is sensible be like that which is insensible? Can a real thing, in itself *invisible,* be like a *color;* or a real thing, which is not *audible,* be like a *sound?* In a word, can anything be like a sensation or idea but another sensation or idea? *Hylas.* I must own, I think not."

Surely Hylas is very accommodating here. Is not this term "sensible" ambiguous? It suggests something which is psychical, or immaterial, in a metaphysical sense. Can something which is immaterial be like something which is material? But when we come to look more closely at the facts, we soon note that it should mean here only intuited. The argument becomes as follows: Material things cannot be in-

tuited while ideas are. Therefore ideas cannot be like material things in any shape or fashion. But why? Does *being intuited* change the nature of a character like shape or color? Shape and color are not so much mental entities as characters discriminated in a complex pulse of consciousness. If so, it would seem to involve a bit of dogmatism to assert that what is intuited cannot resemble what is not intuited. We must have good empirical reasons if we are to deny resemblance of the sort that would give a foundation for cognition. It is certainly the case that in perception we do interpret objects in terms of characters such as these. At first, this assignment is automatic and expresses the mechanism of perception. What reflection can make of it remains to be seen.

But Berkeley is so dominated by an ontological dualism of stuff in his thought of the problem that he simply argues that a *mental* idea cannot be like a *material* thing. But we must ask ourselves whether cognition has anything to say about stuff at all. What we want to know about things is their characteristics, like shape, size, structure and behavior. And why cannot we know these characteristics by means of intuited characters in our experience? We tend to interpret things in terms of what we regard as relevant and informing data. Are we not justified in this tendency basic to cognition? Did not Berkeley and the first representative realists mix up ontological and epistemological questions? We can see that Cartesian dualism made this almost inevitable.

Berkeley next proceeds to criticize the material world as conceived by his predecessors. What is the significance of such a completely external and scarcely attainable world? Let us remember what a hypothetical thing it had become. Given Berkeley's theory of knowledge and his animus against a material world as the cause of atheism, it is no wonder that he argues that this whole construction of matter and absolute space involves abstract ideas and is mythical. Ideas are the only real things; the world as you see it is the real

world but, contrary to natural realism, it has no existence apart from the act of knowing.

Besides these, Berkeley has other arguments. For instance, he asserts that matter, as unthinking, cannot be the cause of ideas. Does he mean that it cannot stimulate the organism to have ideas? If so, this is a dogmatic statement. External things affect the mind through the senses. Here we have the mind-body problem. And we are not so sure to-day that the brain is unthinking. Again, Berkeley's arguments are relative to his day and generation.

His attack upon Locke's notion of substance was very valuable. Locke had taught that a substance was an unknowable something which supported qualities. But what is the nature of this relation between substance and qualities? Are not inherence and support mere metaphors? And by what right do we separate primary from secondary qualities? And is not matter as a mere X meaningless? We shall find that Hume asks the same question and answers it in the same way. It is clear that fundamental questions have been raised and must be answered. I can only hint at the solution which I shall offer. It is that we know *things* and that things have characteristics in the sense that they *are* shaped and massive and are capable of functioning and behaving to other things in certain ways. Locke's substance is not our natural way of thinking of physical things to-day. But more of this later.

The great value of Berkeley is to force us to think the whole situation through very carefully and to try to find out what perception seems actually to be. Frankly, the human mind was puzzled. Berkeley convinced few but he raised insuperable objections to the first form of representative realism. The whole thing had to be gone over again. And it is only lately, with the growth of psychology, logic and the physical sciences, that the indications of a more adequate formulation of representative realism became apparent. The Cartesian setting had to be lived down. Taking

Berkeley's arguments in their day, it is small wonder that they put physical realism on the defensive.

Berkeley's Construction.—Having convinced himself that both naïve and representative realism were untenable, Berkeley proceeded to a spiritualistic construction. Ideas must have a cause and, since, unlike images, they are not under our control, this cause must be something active and external to ourselves. Now the only experience of activity which we have is that of our own minds. In volition we are active, and we can have a notion of this activity. Hence, the only thinkable cause of ideas must be some reality analogous to the finite mind, however different in power and vastness of comprehension. Ideas must be conceived as effects in us of some supreme mind. In this fashion, Berkeley argues to the existence of a divine being who controls in us the panorama which is spread out before us.

Thus on the basis of an idealistic theory of knowledge which rejects the cognitive significance of the data of perception, Berkeley is able to build a spiritualistic metaphysics of a pluralistic type. Finite souls and God alone exist.

It is quite possible to give up representative realism and still hesitate to speculate so boldly about the nature of that which controls in us these orderly percepts of ours. In the preceding chapter, we pointed out how such men as Helmholtz and Herz adopted a sign theory. Is the analogy from the human mind to a supreme mind a valid one? Historically, these doubts were first and best expressed by David Hume, to whose development of English empiricism we shall next turn. Just as Locke raised questions which he could not satisfactorily answer but which led forward to deeper analyses, so Berkeley forced the human mind to delve deeper.

Idealism Does Not Change Our Experience.—The beginner is only too prone to mis-interpret idealism. It cannot be too often stated that idealism does not change the data of perception but only denies inferences and beliefs which we tend to make and cherish. It is for this reason that Berkeley

claimed so earnestly that this outlook was really nearer to that of common sense than was Locke's with its separation of the primary and the secondary qualities and its assertion that the physical world cannot be directly intuited. The sensible world, says Berkeley, is the only external world and it is as you perceive it. Only it is not independent of mind.

Thus it is the truth of those realistic meanings of independence, commonness and permanence, which we so naturally assign to the objects of perception, which he denies. To retain these meanings, Locke and Descartes had asserted the existence of a material world only mediately perceived and known. Berkeley had rebelled against this hypothesis. You cannot, he maintained, separate elements in the sensible world and call some more real than others, for these elements are inseparable and are mental. And the only external world is the one you perceive. In his *Reason in Common Sense,* Santayana describes the resultant position in the following admirable way: "You may indeed, nay, you must, live and think *as if* everything remained independently real. That is part of your education for heaven which God in his goodness provides for you in this life. He will send into your soul at every moment the impression needed to verify your necessary hypotheses and support your humble and prudent expectations. Only you must not attribute that constancy to the things themselves which is due to steadfastness in the designs of Providence. *Think and act* as if a material world existed, but do not for the moment *believe* it to exist." [1]

Gaps in Berkeley's System.—A closer examination soon reveals gaps in Berkeley's system. In the first place, he passes too quietly over the question of a common or neutral world. We have seen that his arguments lead logically to the conclusion that the sensible world, which I ordinarily take to be an independent, physical world, is really only *my* idea. It is a complex of my sensations intuited by myself. It would seem to follow that we do not in any sense perceive

[1] Santayana, *Reason in Common Sense,* p. 115.

the *same* world but only corresponding and, supposedly, similar worlds. But Berkeley did not wish to break too harshly with common sense; so he slurs over this problem.

Another weakness, as we shall see in the next chapter, is his quite inadequate psychology of the self and of volition. He assumes that we can apprehend the self in the creative rôle of producing images. In short, he does not distinguish clearly between his inherited concept of the self as a soul or spirit and the empirical self which he actually experiences. Before philosophy could go much farther, a deeper analysis of "mind" was necessary.

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CHAPTER VII

SKEPTICISM AND PHENOMENALISM

Bewilderment.—The step from Cartesian dualism to spiritualism, from representative perception to idealism, was well calculated to produce bewilderment in the minds of those who took philosophy seriously. Many, of course, did not try to understand Berkeley's arguments nor to realize what his interpretation of the sensible realm was. Thus many of the wits and literary lights of the time "made merry over the supposed unrealities in the midst of which the Berkeleian must live."[1] They assumed that he drew no distinction between what is perceived and what is imagined. And to kick a stone was taken to be an adequate refutation of such nonsense. But our careful study of the philosophical movement has shown us that idealism could not be conquered in that way, that it was the expression of genuine difficulties in the older views, difficulties which must be faced and overcome. Natural realism had broken down: could some form of representative realism be carried through in its place? To deny the possibility involved idealism or something very like it. Clearly, a more fundamental analysis of human experience had to be made. This analysis was begun by David Hume. And it is not too much to say that the history of philosophy since has been a continuation of his effort, a continuation disturbed and distorted by false assumptions at times, and yet gradually leading to the outlook of to-day.

Hume's reflections led him to a position called variously phenomenalism and skepticism. It was a skepticism of the constructions of former thinkers; and, positively, a stress

[1] Cf. Fullerton, *An Introduction to Philosophy*, p. 169.

upon what is *given in experience* as ultimate for the human mind; that is, it had two directions. He could not see that either the traditional dualism of two substances, with all the scholastic principles and concepts that went with it, was justified, nor that Berkeley's spiritualism was in much better case. Hence the task which remained was to take stock. To get some adequate criterion for abstract principles and so build again from the foundation up; to do more thoroughly what Descartes and Locke and Berkeley had done inadequately because they had not been empirical enough. How often this effort has been made in philosophy! Through these accumulated efforts something satisfactory is at last being achieved in our days. Hume made as big a contribution to this clearing up as we can put to the credit of any one thinker. Yet even he, as we shall see, was a man of his age and made mistakes. Philosophical advance, like scientific advance, is cooperative and by degrees. How could it be otherwise?

Hume's Summary of Results.—Locke had taught that the primary qualities of matter, which are copied more or less adequately in certain of our ideas, *inhere* in a material substance of an unknowable nature. Descartes had maintained that the basic attribute of matter is extension and that this is known representatively by our clear and distinct idea of extension developed somehow by the soul. Locke, as we pointed out, was less dogmatic than Descartes and more inclined to express himself humorously. It was Berkeley who challenged these fundamental theories, demanded an empirical origin for the ideas, and maintained that they were full of contradictions and absurdities. He developed more rigorously than Locke what is often called *nominalism*, a skepticism of abstract ideas and a demand that they be brought into touch with perceptual data. It was this method which Hume adopted and applied even more rigorously. For Berkeley, then, a physical thing is only a cluster of data or ideas. Let us listen to Hume's summary: "Thus the first philosophi-

cal objection to the evidence of sense or to the opinion of external existence consists in this, that such an opinion, if rested on natural instinct, is contrary to reason, and if referred to reason is contrary to natural instinct, and at the same time carries no rational evidence with it, to convince the impartial enquirer. The second objection goes farther, and represents this opinion as contrary to reason: at least, if it be a principle of reason, that *all sensible qualities are in the mind, not in the object.* Bereave matter of all its intelligible qualities, both primary and secondary, you in a manner annihilate it, and leave only a certain unknown, inexplicable *something,* as the cause of our perceptions; a notion so imperfect that no skeptic will think it worth while to contend against it."[1] It is clear that Hume thinks that representative realism cannot be carried through. He admits that we are all naturally realists but is convinced that reason is unable to justify either natural realism or representative perception.

Hume's Attack upon Mental Substance.—Berkeley's animus led him to direct all his critical energy against the idea of an external physical world. The result was that he was traditionalistic in his treatment of the mind. It was in this domain that he left an opening for the keen analysis of Hume. Hume was not satisfied to speak of the self, soul, spirit or mind as though these were identical terms easily understood. Berkeley had spoken of the self as an object of which we have a notion or intuition. He seems to have regarded it as a substance, that is, something existing and having its own nature, and as the active cause of changes in our images. He seems also to have held that it somehow possessed the ideas which we perceive. Their being was bound up with the act of perception. He was convinced that they could not be thought of as existing separately and independently. Now it is this basic self or soul which possesses ideas which Hume undertakes to analyze.

As a nominalistic empiricist of Berkeley's own type, Hume

[1] Hume, *An Enquiry Concerning Human Understanding,* sec. XII, pt. 1.

asked the vital question, How do we know this self? Is it, like Locke's material substance, an hypothesis? Or is it more empirical and present in experience? His conclusion was epoch-making and began that psychology without a soul which has been dominant ever since. Hume could not find a soul-substance by introspection. And since he was inclined to doubt representative perception in the case of the external world, it was very natural for him to doubt it for a self clearly not given in experience. In both directions he was a *phenomenalist;* that is, he limited himself to what is given in experience.

Consciousness Is a Flux.—Psychologists have decided that the field of the individual's experience is constantly changing; sensations, images, meanings come and go according to the direction of the attention, external stimuli and associative processes. This changing field of experience they call consciousness. In it are found the *data* of which I become aware or conscious. It is to-day realized that there are many false notions to be avoided in regard to sensations and ideas and the general make-up of consciousness. We must not make entities out of sensations and ideas and think of them as acting like mental atoms combining and associating and separating. This false view had quite a vogue in psychology for about a century after Hume and is called *associationism* and mental chemistry.

Hume was one of the first to examine the content of consciousness in an empirical frame of mind. As we shall see, even he had his presuppositions which blinded his eyes partially to what is given, but he came pretty near the truth. His is such a classic statement that it deserves full quotation and interpretation. "For my part," he writes, "when I enter most intimately into what I call *myself,* I always stumble on some particular perception or other, of heat, or cold, light or shade, love or hatred, pain or pleasure. I never can catch *myself* at any time without a perception, and never can observe any thing but the perception. When my perceptions

are removed for any time, as by sound sleep, so long am I insensible of *myself*, and may truly be said not to exist. . . . Our eyes cannot turn in their sockets without varying our perceptions. Our thought is still more variable than our sight; and all our other senses and faculties contribute to this change; nor is there any single power of the soul which remains unalterably the same, perhaps for a moment. The mind is a kind of theatre, where several perceptions successively make their appearance; pass, repass, glide away, and mingle in an infinite variety of postures and situations. There is properly no simplicity in it at one time, nor identity in different; whatever natural propension we may have to imagine that simplicity and identity. The comparison of the theatre must not mislead us. *They are the successive perceptions only, that constitute the mind; nor have we the most distant notion of the place, where these scenes are represented, or of the materials, of which it is composed.*"[1]

Hume was convinced that we are confined to these changing experiences which he called perceptions. Perceptions are divisible into two classes which are distinguished by their different degrees of force and vivacity. The less forcible and lively are called thoughts or ideas; the other class he names impressions. He argues that ideas are copies of impressions. If the one is a presentation, the other can be called a re-presentation. This relationship furnishes him with a criterion for abstract philosophical terms. We need but enquire, From what impression is that supposed idea derived? And if it be impossible to assign any, this will serve to confirm our suspicion.[2]

Now he holds that there is nothing permanent or substantial about these perceptions. They come and go. Another point: he teaches that perceptions are distinct units which have no intrinsic relations with one another. Hence the mind taken as a flux of perceptions is a changing complex of ele-

[1] Hume, *A Treatise of Human Nature*, bk. 1, part 4, sec. 6.
[2] *An Enquiry Concerning Human Understanding*, sec. 2.

nents. In the quotation from the *Treatise* given above, we noted his agnosticism. Of a mind other than the successive perceptions we have not the most distant notion. If it is supposed that there is a larger world of existence in which these empirical minds, or flux of perceptions, are, we must admit that it escapes our apprehension. Only perceptions are given. And it is clear that Hume holds that knowledge must be given in experience. This is, of course, a big assumption; but one which was natural after Berkeley's attack upon representative realism. We are left with mental contents as such with no assurance that anything lies beyond. As directed against belief in substantial realities such as matter and spirit, this conclusion is called skepticism. As tending to the belief that only perceptions or phenomena exist, it is called phenomenalism.

Hume's Rejection of Berkeley's Spiritualism.—It will be remembered that Berkeley based his construction upon certain premises. He assumed with Locke and Descartes that our ideas must be caused or controlled by something external. They must have a cause or source, and we are not aware of causing them. This source must be active to be a cause. But the only active thing of which we have any knowledge is our mind or self. Hence this cause of our ideas must be a mind. Since our own minds are obviously not powerful and comprehensive enough to account for our orderly perceptual experiences, we must postulate a supreme mind as the controlling and active agent whose influence arouses in us the perception of a sensible realm. Such is Berkeley's chain of reasoning. Let us examine Hume's objections.

We have already noted that Berkeley had not sufficiently analyzed the subjective side of experience. He seems to have taken it for granted that he experienced a sense of activity in volition of an almost creative or productive sort. It is this that Hume denies. Ideas arise in our minds but we know not why. The psychologist speaks of the association of ideas

and tries to explain their advent and exit by neural changes. But assuredly we are not aware of any productive agency in our will which brings forth thoughts. When thoughts come, we are often enough surprised by them. "Volition is surely an act of the mind, with which we are sufficiently acquainted. Reflect upon it. Consider it on all sides. Do you find anything in it like this creative power, by which it raises from nothing a new idea, and with a kind of *Fiat*, imitates the omnipotence of its Maker, if I may be allowed so to speak, who called forth into existence all the various scenes of nature? So far from being conscious of this energy in the will, it requires a certain experience as that of which we are possessed, to convince us that such extraordinary effects do ever result from a simple act of volition."[1]

Thus Hume appeals to a keener analysis of experience than Berkeley had made to refute the latter's superficially persuasive argument. We are unacquainted with anything of the nature of productive, or creative, activity as much in ourselves as in sensible nature. We are aware of what we have good reason to consider directed change but not of production. There are some very interesting points in regard to this which we must later consider. But I do not think that there can be any doubt that Hume was nearer the truth here than was Berkeley. We are assuredly not aware of the creative activity of any spiritual substance. Let us admit, however, that psychologists still dispute as to whether we have an experience of *conation* or whether conation is merely a term for organic function in which consciousness participates.

By means of this extension of analysis, Hume showed that Berkeley's arguments against the existence of a physical world apply equally against the existence of a creative spiritual source of ideas. "Were our ignorance, therefore, a good reason for rejecting anything, we should be led into that principle of denying all energy in the Supreme Being

[1] *Enquiry*, sec. 7, part 1.

as much as in the grossest matter. We surely comprehend as little the operations of one as of the other. Is it more difficult to conceive that motion may arise from impulse than that it may arise from volition? All we know is our profound ignorance in both cases."

Hume's Treatment of Causation.—Descartes as a rationalist had identified causation with explanation. He assumed that the mind must be capable of *deducing* an inner relation between cause and effect such that the effect could be understood as following from the cause. But his successors soon realized that this view presented difficulties. In the case of the external world, can we understand the connection between events by mere conceptual analysis? Here, again, Cartesianism was found to be vague in the extreme when search was made for ultimate principles. God, self and the world tended to fall apart.

Berkeley and those inclined to spiritualism were convinced that the external world had nothing of efficacy in it. It could, or should, be discarded. Spirit is the sole cause. Causation is creation. This phase of the development was sufficiently dwelt upon in the discussion of Berkeley's idealism.

Now Hume could see no basis in experience for this occult creative spiritualism. He undertook, therefore, to analyze the causal connection anew on the basis of his empirical principles. "Suppose a person, though endowed with the strongest faculties of reason and reflection, to be brought on a sudden into this world; he would, indeed, immediately observe a continual succession of objects, and one event following another; but he would not be able to discover anything farther. He would not, at first, by any reasoning, be able to reach the idea of cause and effect; since the particular powers, by which all natural operations are performed, never appear to the senses; nor is it reasonable to conclude, merely because one event, in one instance, precedes another, that therefore the one is the cause, the other the effect. Their conjunction may be arbitrary and casual. There may be no

reason to infer the existence of one from the appearance of the other."[1]

After canvassing the situation, Hume can find nothing but an external relation between the two events which are called cause and effect; and this external relation is nothing but *a feeling of transition* which arises through habit. It is this feeling which is the original impression from which the thought of necessary connection is derived. A cause is an object followed by another, and whose appearance always conveys the thought to that other.

That Hume's analysis is a distinct advance upon all that had gone before there can be no doubt. But we must pass two criticisms upon it. First, it reflects his phenomenalism. He is dealing only with events in experience, and these events are distinct perceptions which are by their very nature supposed to be discontinuous elements. But surely in cause and effect we suppose ourselves to be knowing effective processes in an external nature. In the second place, his analysis does not do justice to the work of *testing* causal relations which is characteristic of scientific investigation. But his analysis set a problem to inductive logic which it is only beginning to solve. Do we not seem to ourselves to be discoverers of a pattern or order in nature by means of the data which we note in experience? And how do we eliminate those false suggestions which we finally decide are not revelatory of a basic order in nature? Hume leaves too much to be done by passive association or frequency. We shall see in the next chapter how Kant, another important thinker, dealt with this problem. And in a later, constructive chapter, we shall ourselves discuss causation.

Taking Stock.—What did Hume accomplish? In the final analysis, he drove thought back to experience, that is, to a careful investigation of our distinctions and their foundation, back to logic and psychology. He did this by showing that the thought of his predecessors led to phenomenalism.

[1] *Enquiry*, sec. 5, pt. 1.

Thus he reenforced Berkeley's attack upon the traditional type of representative realism, and he added to this a telling analysis of Berkeley's own spiritualism. Now I do not for a moment deny that there were points in Locke's presentation to which neither of these later thinkers did justice. What they did do was to take one tendency in Locke, the extreme empirical or psychological side with its thought of ideas as mental entities loosely connected, and develop its implications. They refused to take seriously the distinction between idea and object and to investigate what we now call *objective reference*. They were convinced that any cognitive transcendence of the individual's consciousness was impossible. It is this attitude which is called phenomenalism. And we must admit that many thinkers, even to-day, hold that they were justified.

What, then, does Hume enable us to do? To make a fresh start in which we build from the ground up, in which we interrogate experience instead of starting with many insufficiently analyzed assumptions. Descartes undertook to do this, but he was unable to carry it through because his mind was full of medieval philosophy. His doubting was more a form than an actuality. The development through Locke, Berkeley and Hume was necessary before the human mind was ready to study experience carefully and inductively.

The first revolt against phenomenalism was led by Reid, a professor of philosophy at Glasgow. The conclusions drawn by Hume startled him and led him to question the assumptions. He wished to return to the view that we perceive things directly, that things, not ideas, are the objects of the mind when a man thinks. Thus he tries to defend natural realism. Now there is a great amount of truth in natural realism as compared with phenomenalism. Surely we believe that we perceive and know things and not ideas. But may we not perceive and know things *in terms of ideas?* Reid wished to reject ideas altogether as leading to subjectivism, but the facts were against him and he was forced to contra-

dict himself or else fall back on dogmatism. Reid was up against a difficult problem, in fact just the one which we shall need to face, but he wavered and left his position vague. With him began the so-called Scottish School of philosophy which, in a too often degenerate form, was influential in this country before the spread of German idealism.

It is generally supposed that Immanuel Kant added certain essential elements to the analysis of experience which Hume had made. And in a measure this is true. Unfortunately, Kant approached his problem in a very technical way and under the influence of the rationalism of the Continent. He was trying to fuse empiricism and rationalism. The senses contribute something and the mind contributes something. But, as we shall see, he also tends to be a phenomenalist. It is for this reason that his successors swung to idealism and founded the great modern movement of romantic idealism. They were too willingly convinced that physical realism of a representative sort could not be carried through. Mind and its activity became the dominant note in philosophy. It was not until the teachings of biological evolutionism gained power and prestige that mind was again drawn back into nature and a truer perspective again dawned.

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CHAPTER VIII

THE PERIOD OF PREPARATION

Kant Seeks a Compromise.—After Hume, the main current of philosophy swings from the British Isles to Germany. The German thinker, Immanuel Kant (1724-1804) sought a way of escape from the barren type of rationalism which had grown up in Germany after the days of Leibniz and Wolff. There can be no doubt about Kant's great ability.

His first period of production has been rightly called the "Period of Scientific Eclecticism."[1] He wrote many essays on current topics of discussion among scientists, such as *"Thoughts on the True Estimate of Vis Viva, and a Consideration of the Arguments of Leibniz and Others in the Mechanical Controversy with preliminary Remarks on the Force of Bodies generally"* and the famous *"Universal Natural History and Theory of the Heavens."* It was in this latter work that he is said in some measure to have anticipated La Place's nebular hypothesis.

As a result of this interest in science, Kant became aware of the type of knowledge which it seeks to achieve and of the general character of the basic concepts, such as space, time, quantity and causality, with which it works. After all, Kant was primarily a philosopher and the problem of knowledge pressed ever more heavily upon him. This brings us to his second period. Between the years 1762 and 1766 he came into contact with the thought of Locke and Hume. For a short while he ranged himself on the side of empiricism. But, in 1770, he swings back to rationalism once more. In

[1] Wenley, *Kant and His Philosophical Revolution.*

the famous *Dissertation* of that year he delimits sense from intellect much in the manner of Descartes. The intelligence is the *source* of certain notions or pure concepts, and it is the work of metaphysics to analyze these notions and thus to bring out their implications. We have already seen how drastically Hume dealt with such innately given notions. It is clear, then, that Kant had not taken Hume to heart. And now comes the so-called "Critical Period." His problem was that of bringing together these two sources of experience. In a celebrated letter to a friend called Herz, he propounded his problem: "I ventured to say in the *Dissertation,* that the ideas of sense represent things as they *appear,* while the conceptions of the understanding represent things as they *are.* But how can the ideas of these things be given to us, if not by the mode in which they affect us? Or, if the pure conceptions of them be due to our own inner activity, whence comes the agreement that they are presumed to have with objects which, nevertheless, are not their products? *How can reason prescribe axioms about things without any experience of them?"*

Now it is quite essential that we note his idea of reason as an innate power which, as it were, emits axioms and concepts. Kant never got beyond this conception of reason; for him, there is no real continuity between sense and understanding.

What, then, was his critical solution? Essentially this, to hold reflective experience with its structure and distinctions a product of the arrangement of sensations by *forms originating in the mind.* Sense, alone, is not knowledge; it is a mere manifold. Pure concepts, alone, do not constitute knowledge; they are empty. Knowledge is a resultant of their union. Is it not obvious that we have here an answer to a problem set by the two traditions of philosophy which met at this time? But it is really a mechanical solution which does not go back of the traditions. It does not represent a fresh start. He has not re-analyzed either mind or sense;

the Cartesian dualism lurks back of the terms. Almost unwittingly Kant suggested a more adequate empiricism than Hume's. As we analyze his system, we shall see why it represents an advance and yet leads astray. Kantianism was by no means an unmixed blessing.

Thus it is generally acknowledged that Kant stressed the active, constructive character of the human mind. The world as we experience it in knowledge is not a gift to our senses but a very complex piece of painstaking architecture. Kant tries to lay bare the plans of this mental construction by means of which sensations are organized and made into phenomena regarded as permanent, common and objective to the self. He asserts that this work of organization is assignable to an Ego which expresses itself through forms.

The Structure of Kant's Theory of Knowledge.—The distinctions which Kant uses are illuminating. On the side of sense, he speaks of the manifold of sensations. These are effects produced by an object (thing-in-itself) upon the faculty of presentation. These sensations, thus produced, are formless but are subconsciously arranged in the forms of space and time which are ready for them in the mind. Kant speaks of sensations as *a posteriori* and as the *matter* of phenomena, while he calls the forms *a priori*. We have now reached the stage of orderly perception. But more than this is needed before knowledge is attained. These perceptual phenomena are given another coating of form. We think into them such basic concepts or categories as substance, force, divisibility, causality, etc. This new level of form or interpretation is due to the *understanding;* and it is only at this level that we have science with its notion of nature as a quantitative, mechanical system of bodies in causal relations. We now have developed experience with objects set over against the self. It is such a system of phenomenal objects which is rightly called the physical world. These objects have no being apart from the field of experience. They are not things-in-themselves but experiential constructs. *They are*

objects in experience. The Kantian scheme can be expressed in its essentials by the following diagram:

Transcendental Ego	→	categories space and time *a priori*	experience with phenomena *resultant*	sense-manifold *a posteriori*	←thing-in-itself

Now it is clear that the things-in-themselves perform the same function as physical things do for Lockian realism, but that Kant regards the cause of our sensations as unknowable and merely postulates some reality outside the mind as the cause. Physical things are by him considered phenomena within experience. This outlook was made easy for him because of the speculations of Leibniz, an earlier German thinker, which resemble Berkeley's spiritualism in many respects.

Two Meanings of the Word Knowledge.—From Locke to Hume, British thinkers had concerned themselves with the problem of the physical world, our knowledge of it if it exists, and whether it exists. Starting with the acceptance of representative perception, they were gradually induced to doubt that there is a physical world outside of the realm of ideas which are given. We have seen how their reflections culminated in the idealism of Berkeley and the phenomenalism of Hume. Thus physical realism came to an *impasse.* The assumption of both science and common sense that there is an independent, neutral world of bodies quite distinct from the individual's ideas was completely challenged. We pointed out that, in Scotland, there arose a reaction against the "way of ideas" led by Reid but that it did not master the problem. And, until our own day, while there were occasional protests, the matter rested much as it was left in the eighteenth century. Physical realism was in disrepute.

But knowledge can have another meaning. It is that which the human mind accepts as sufficiently verified to be believed in. We all pass judgments and grant propositions. The various sciences are, indeed, nothing but systems of knowl-

edge in this sense. Facts, laws, theories, what are these but instances of knowledge? In this meaning of the word, knowledge, we may say that human knowledge undoubtedly exists. The methods by which it is built up are carefully studied by logic.

Let us be certain that we get these two different meanings clearly before us. We can call the first kind *knowledge about*. It is knowledge of an object *by means of ideas or propositions*. The second kind consists simply of the propositions themselves as understood and accepted. Usually these two kinds are united because the first requires the second kind. Thus we cannot have knowledge of a physical thing without the aid of ideas. But, as philosophy attacked the belief in an external world, that is, a realm of objects outside of the field of experience, it was seen that the second kind could exist without the reference to an object which the first kind contained. It is obvious that a scientist can devote his attention to empirical facts and discovered laws without troubling himself with the question of whether there is a physical world in the realistic sense. In fact, many reflective scientists have been phenomenalists.

Kant and Hume Skeptical of the First Kind of Knowledge. —As a matter of fact, when it comes to the first kind of knowledge, there is little to choose between Hume and Kant. Neither was a physical realist in the Cartesian and Lockian sense. Hume knows only perceptions which largely correspond to Locke's ideas. Kant speaks of physical things as *phenomena* and contrasts them with *noumena* or things-in-themselves. So far, then, as the theory of the first kind of knowledge is concerned, there is little to choose between Hume and Kant.

Happily, Kant has expressed himself clearly on this point. "Idealism consists in the assertion that there are none but thinking beings, all other things, which we think are perceived in intuition, being nothing but representations in the thinking beings, to which no object external to them corre-

sponds in fact. Whereas I say that things as objects of our senses existing outside us are given, but we know nothing of what they may be in themselves, knowing only their appearances, i. e., the representations which they cause in us by affecting our senses. Consequently, I grant by all means that there are bodies without us, that is, things which, though quite unknown to us as to what they are in themselves, we yet know by the representations which their influence on our sensibility procures us, and which we call bodies, a term signifying merely the appearance of the thing which is unknown to us, but not therefore less actual. Can this be termed idealism? It is the very contrary.'' [1]

While Kant's use of terms is not as accurate as could be desired, it is easy to make out his meaning. The bodies within the field of human experience are mental and are to be called phenomena, while the things which affect our sensibility are to be called things-in-themselves or noumena. The Kantian thing-in-itself is that ''unknown, inexplicable something as the cause of our perceptions'' of which Hume speaks. Because Kant did not doubt the existence of this realm outside the field of experience but only our knowledge of it, his position is properly called *agnosticism*. He held that we are forced to believe in such a trans-experiential or transcendent realm but that we can never know its nature.

Kant's Doctrine of the Categories.—We have already said that, in a blundering sort of way, Kant began a more adequate analysis of experience than had been developed up to his time. His limitation lay in his inheritance and acceptance of a dualism or discontinuity between sensibility and understanding, on the one hand, and an ungenetic approach to experience, on the other. He never raised the question of how the higher levels of experience are reached. ''Apart from the systematized experience obtained through the real categories he can find nothing left save what he fancifully styles 'a rhapsody of perceptions which is not knowledge and

[1] Kant, *Prolegomena*, sec. 6, remark 2.

could never yield an altogether coherent consciousness.' How in that case the behavior of the lower animals, the gradual advance of every normal child and of the human race as a whole from such a beginning to 'the age of reason' is conceivable, he never dreamed of explaining.''[1] Thus it has been pointed out again and again that Kant's statement of his problem is pre-evolutionary. He does not regard the mind as a concrete growth but as an entity endowed once for all with certain fixed capacities. Modern psychology, which is through and through genetic and biological, enables us to view the field of experience as a development expressive of bio-psychological functions and operations. But I shall have more to say of this when I come to my own constructive interpretation.

It is generally admitted that Hume did not do justice to the pattern of experience, to its internal structure and continuities and relations. He was too much of a sensationalist of an atomic sort to be a true empiricist. Also, from Berkeley he had accepted the nominalist theory that we do not possess abstract ideas but are limited to impressions and their fainter reproductions. He seems to have thought of the field of consciousness as simply a collection of such impressions and images.

Now Kant saw that this analysis was quite inadequate. Knowledge involves complex thoughts, and such complex thoughts contain ordered constructions. Thus ''Columbus discovered America in 1492'' is a complex proposition which is understood. In it we have unity in complexity. We distinguish and relate at the same time. Kant sought to remedy Hume's denial of relations and continuities by introducing another kind of mental element which, combined with sensations and images, would account for knowledge as it is in science. His problem may be called one in structural psychology. What is added to sensations to make percepts, concepts, propositions, and systems of scientific knowledge?

[1] Ward, *A Study of Kant*, p. 65.

Kant taught that the mind in its own right contributes *unsensational* elements or forms, and these, as taking up sensation as concrete matter, constitute our actual experience at the level of reflection. These unsensational elements which the mind contributes are the categories.

The problem which Kant raised is, as we have suggested, one for psychology and logic to solve. Do we ever begin with atomic sensations? Or are not sensations rather distinctions in a presentational continuum? Are not relations and meanings present in our experience from the first? It is along this line of emphasis on continuity and synthetic motor response that modern bio-psychology is working. The organism is stimulated, but the stimulus may be complex and patterned as in vision; and the response of the organism expresses the synthesis of past experience. There is internal organization, and this organization is brought to bear functionally upon the stimulus. The field of experience reflects this basic process. We shall have more to say of this point of approach later.

Now Kant had not insight into this functional, genetic way of approach. For him, the supplementary elements over and above the specific sense-content must come from a fixed source in reason. They must be contributed by the Transcendental Ego. Space, time, permanence, quantity, causality, all these structural forms of knowledge are injected, as it were, into the sense-manifold. And Kant struggles to bring the two ingredients together.

The Categories Are Subjective.—For Kant, the categories are subjective in a double sense. They are innate and contributed by the Ego; and they have no significance for the realm of things-in-themselves. The second position follows from the first. It would be by the merest accident that forms and relations thus produced by an independent self would have cognitive significance for a separate realm of things-in-themselves whose sole function is to cause an inchoate manifold of sense. Kant shuts himself into agnosticism with

respect to this postulated realm by his very approach. He taught that the categories exist only in the mind and have significance only for phenomena in experience. To refer them beyond experience is to misuse them. We might paraphrase Berkeley's argument and say that Kant's view was that a category could be like nothing but a category. Subjective spatial order could not in any way correspond to an external spatial order. And the same with temporal order and causal connection. It is obvious why Kant drew again the skeptical conclusion already drawn by Hume. Knowledge can be only the presentation to the knowing self of constructs within experience. It is an awareness of law among phenomenal bodies. And if the world of things-in-themselves is neither spatial nor temporal, it would seem the veriest nonsense to speak of it as the physical world. The true physical world, that with which science deals, is the world of interconnected phenomenal bodies. And it is because the structure of this world is given by mind that we find our understanding at home in it.

Let us for a moment compare his position with that of Descartes. Both accept much the same discontinuity between sense and reason. Descartes, however, puts his faith in reason alone and rejects sense as misleading. Yet he wants knowledge of an external physical world. Being confined to his concepts and being unable to compare them with this world, he finds his criterion in the faith that God would not deceive us and that, therefore, all our clear and distinct ideas are true, that is, reveal to us the essential nature of this otherwise hidden material realm. Kant has much in common with Descartes but does not seek to know an external world. In the realm of experience, made by the confluence of sense and reason, the only significant knowledge exists. The spiritualism of Leibniz had intervened for him, much as the spiritualism of Berkeley had intervened for Hume. He worked within a set of assumptions which hardly exist for us to-day.

But Are the Categories Subjective?—Recent thought is

strongly inclined to challenge the position that the categories are subjective in either of the senses mentioned above as holding for Kantianism. The categories, I would say, are not emitted by a peculiar Ego as characteristic innate forms; nor are they without significance for an external world transcending the field of experience. These points we shall develop in detail later and we can only call attention to them here. In the first place, we must *begin* with experience as it presents itself and not with a hypothetical chaos of sensations and a hypothetical group of forms. Are not both of these artificial abstractions due to a misunderstanding of the actual flow and development of experience? We must press deeper and seek to understand the content of experience by means of a study of mental operations and results. Modern logic and psychology will help us much in this endeavor though we must keep our own eyes open. We shall find that experience has a *pattern* from the beginning and that, as the mind grows in response to the world and its problems, this pattern acquires meanings and passes to the interpreted thought of bodies in relations to one another. In short, the categories are implicit in perceptual experience and are elicited and developed by thought rather than secreted by a mysterious internal self. And if they are thus objective within experience and are seemingly built up in response to the external world, may they not be patterned after it and revelatory of it? If so, the categories would not be subjective in any invidious sense; they would have cognitive significance for external things. And these should no longer be spoken of as things-in-themselves.

This basic re-construction of Kantianism which seeks to remove its false subjectivism, its inherited opposition between sense and reason, and its agnosticism indicates to us at the same time the re-construction of Cartesianism which is necessary. Here, again, we must not begin with a metaphysical dualism between mind and matter. It was this separation which, together with the separation between sense

and reason, gave the artificial twist to the problem of knowledge which led philosophical thought astray. Instead of categories growing up in experience under the control of the external world and therefore inevitably significant for it, we have ideas of reason produced by the mind out of itself and not in cooperation with the external world to which they are to apply. What wonder that their cognitive significance must be a matter of preestablished harmony, as it were, to be guaranteed by God, or a mystery which we humbly accept because God would surely not deceive us and implant in us clear and distinct ideas which were not true! It is obvious that we are to-day largely free from these sets of assumptions and approach the problems of philosophy in a more empirical and inductive spirit and in the light of the biological setting and function of mind. This much in the way of anticipation and suggeston.

The Period after Kant.—It has not been our purpose to go into the history of philosophy for its own sake; we have desired only to grasp the typical problems of modern philosophy and to appreciate the way in which they were approached. The period after Kant was remarkable chiefly for the rise in Germany of a romantic idealism called variously absolute and objective idealism, and for its spread to other countries including England and the United States. It must not be denied, however, that the older empirical tradition persisted and found able advocates in such thinkers as Mill[1] and Sidgwick,[2] and that, after the fervor of absolute idealism had spent itself, this tradition in a modified form again came to the front. In the meantime, advances made in mathematics, logic and psychology, together with the success of the sciences, gave a new orientation to philosophy. Since these later developments will appear in detail in the constructive part of this book, they can be neglected at this point. A few

[1] John Stuart Mill (1806-1873), author of *System of Logic, Utilitarianism*, etc.

[2] Henry Sidgwick (1838-1900), author of *Philosophy; its Scope and Relations*, etc.

words about the rise and general character of absolute idealism will finish our brief historical sketch.

We must admit that Kant's position, for all its suggestiveness, was a rather mechanical compromise between sensationalism and rationalism. All *order* is contributed by the mind from its own resources. And this mind is still thought of as something essentially beyond the scope of science. Later we shall argue for the naturalization of mind; so this point must be carefully noted. Furthermore, Kant's position was a half-way house between realism and idealism. While dominated by the problems he had inherited—we might almost call them puzzles—he sought to maintain a balance between extremes. He was neither quite a realist nor an idealist. If we think of him as a realist, it must be as an *agnostic realist,* a believer in unknowable things-in-themselves. And he speaks in terms of condescension of the "good Berkeley."

But his successors took the bit between their teeth and entered on a career of speculative construction. There is no reason to belittle their ability. In social, ethical and political matters they made genuine contributions. But it is doubtful whether they did justice to the natural sciences and to the problems connected with perception and the relation between mind and body. In their hands, *Experience* became a sort of autonomous reality. We can easily see why this was, and, because the assumption has been so important in its continued influence on philosophy until the recent rise of realism, it is well to get the basis of it clearly in mind. It was the thing-in-itself as a cause of sensations which was attacked. Are not the categories forms contributed by the mind for the ordering of sense according to Kant? If so, are they not limited in their significance to this application to sense to form experience? If so, we cannot use the category of causation outside of experience and speak of things-in-themselves as causing the manifold of sense. Causation is only a relation within experience and it is really quite meaningless to refer to realities outside of experience.

Let me raise a query here. Psychology and logic have seen good reason to doubt that we ever begin with a *chaos* of mere qualities like color and sound. There is pattern, order, correlation from the first. Spatial and temporal relations are experientially primitive even though they develop and deepen as the organism continues to function. We shall argue that the categories grow in a natural way from the cues and suggestions given in experience and that they are not contributed by a transcendental mind. But, if so, they are assigned to things just as colors and sounds are. It is things which are in spatial relations and it is external events which are in temporal relations. In short, the content of experience is from the first directed to, and concerned with, the things to which the organism is adjusting itself. Experience is not substantive, as idealists tend to hold, but a phase of the functioning of the organism. *We perceive and think things in terms of discriminated characters among which are relations.*

But philosophy had not yet grasped this functional view. The Cartesian dualism had prevented it. It is only recently with the growth of biology and psychology of a biological setting that this more functional type of realism could arise. Man has a complex world to master and it is not surprising that assumptions hold his eyes from what seems to later generations the obvious outlook. It is all a matter of growth, the greater part of which we owe to the steady, cooperative advance of science.

As we would expect, the idealists of this period were weakest in their philosophy of nature. In the social and political fields they attacked extreme individualism and appreciated the idea of development. It would be absurd to deny their keenness and speculative fertility. Fichte was an ethical genius and emphasized the will; Schelling stressed feeling and was led to postulate a world-mind of an intuitive and creative type, thus moving in the direction of pantheism; Hegel was a rationalist and tried to work out the inner logic

of an absolute reason. All of them believed that intense speculation could by itself lead the thinker into the heart of reality. They had gotten rid of an independent physical world and were convinced that reality was akin to that in themselves which seemed to them central and important. Unfortunately there was not enough cooperation with science in this romantic wave of speculation.

This movement exhausted itself and, as time passed, the more empirical and realistic traditions which had always kept more closely in touch with science began to regain attention. Toward the end of the nineteenth century, we hear of pragmatism and realism. It is in these movements that the most hopeful recent philosophical work has been done. Yet the idealistic tradition may be said to have exercised a steadying influence upon both of these rather emphatic novelties.

We shall now endeavor to do definitely constructive work in theory of knowledge and at the same time orientate the student in regard to the present situation in philosophy. It will be our aim to bring out problems and to suggest analyses and solutions. In this way, it is hoped, the student will learn to philosophize because he will see that the problems are at once unavoidable and tremendously important.

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CHAPTER IX

REFERENCES AND DISTINCTIONS WITHIN CONSCIOUSNESS

Significant Points Learned.—As a result of the careful studies made in the preceding chapters we should now be ready to make a constructive advance in epistemology. We are at one and the same time acquainted with the difficulties confronting natural realism and with the dangers which threaten any attempt to pass beyond it. And in this case to be forewarned is to be forearmed. We know what mistakes to avoid. It is also clear that there has been an historical growth in these matters, a gaining of insight. Through many centuries philosophy has been feeling out possibilities and acquiring a competent knowledge of the human situation in knowing. There is good reason to believe that all this information is at last beginning to fall into order.

Let us, first of all, take stock of the points we have learned. On the whole, the following three seem to be the most important: (1) the error of separating sense and reason into two domains having distinct sources; (2) the error of the assumption that mind and matter are two distinct substances isolated from each other; and (3) the theory, connected historically with this two-substance view, that knowledge is directed at ideas rather than at objects. In our historical sketch we saw that these assumptions controlled the outlook and problems of Descartes, Locke, Berkeley, Hume and Kant. A few words about each of these points may be of assistance.

In place of the contrast be[illegible]d reason, the modern thinker puts the recogni[illegible]evels in experience. Suppose that we take sense-perce[illegible]n as the first level of prime interest to the epistemologist. We soon discover that

(1) there is structure, or pattern, in what is presented in sense-perception and (2) that there is interpretation and judgment at work. Explicit reasoning is a term for methods, operations and processes which build upon and add to this level. It is a term for analysis, the discovery of relations, the seeking of more facts, the development of concepts, the application of experimental methods, etc. Thus reasoning is a term for operations, methods and capacities which carry our experience farther and deeper than sense-perception alone can. But it is not a term for a special faculty.

We may say, then, that the old dualistic, faculty psychology and logic have been replaced by a keener and more empirical sense of the gradual growth and complication of experience and of the processes upon which this complication and conceptualization rests. However far down we go, there is a form, or pattern, to the content of consciousness. It was this form which Hume with his atomic sensationalism neglected and which Kant artificially brought in. May it not be that this pattern of experience reflects the pattern of the world to which the conscious organism is adjusting itself? To take the stream of consciousness as something isolated and independent would be a mistake.

Thus we are led to the second point. The two-substance theory of Descartes set problems which could not easily be answered and gave a bias to epistemology which it has found it hard to overcome. Locke's inability to carry through a representative realism led to idealism and phenomenalism. If there are substances, how can we know them, was the seemingly unanswerable query. What do we mean by a substance? Berkeley's arguments have seemed to many convincing. We shall find that, even in contemporary philosophy, there is a strong bias against the belief in any kind of stuff.

If we know only our ideas we cannot know substance. Hence this second point leads to the third assumption which confused philosophy for so long a time. Are we confined to ideas of a subjective sort? Let us remember that, on the

two-substance theory, the mind is confined to its own ideas which are, as it were, a part of its substance. This was what was meant for a long time by saying that ideas are mental.

But cannot we say that ideas are subjective in the sense that they are bound up with the individual organic knower and those operations which we call mental. In this sense, to say that ideas are mental has nothing to do with the two-substance theory. It is to localize them and the operations which go with them. It is just to admit the fact of consciousness. What consciousness is and how it is bound up with the organism becomes a specific question which metaphysics must busy itself with.

Lastly, it is now recognized that our attention and our cognition are from the first directed toward things. It is things, and not ideas, which we perceive and know. It is things which we seek to interpret and pass judgment upon. In this regard, consciousness would seem to reflect the activities of the organism. It would seem to be empirically correct to say that we look out through ideas at objects. We mean, act toward, adjust ourselves to things as these are presented or *appear*. An introspectionism dominated by the two-substance theory with its isolation of mind did not do justice to this sense of direction in consciousness. It isolated presentational contents, like color and shape, from the perceptual situation and attitude.

What we shall now undertake in the remainder of this chapter is a study of knowing as an empirical kind of experience. We want to get acquainted with our own minds, with their references, structures and claims. Of late years much attention has been given to this kind of preparation for a theory of knowledge. All schools of philosophy have made their contributions. Recent movements in logic and psychology have also helped. There is good reason to believe that a sufficient foundation for theory of knowledge is thus being achieved, and, sooner or later, this will lead to general agreement in philosophy.

Descriptive Empiricism.—With this preparation, let us begin our constructive exposition by a survey of consciousness. We shall note its distinctions and claims. Instead of beginning with a hasty view of what knowledge is, we shall try by close study to find out what it is. Instead of beginning with a fixed notion of mind and matter, we shall work up to a critical view of both. And our point of departure must be the field of conscious experience as light is thrown upon it by the sciences.

First of all, be it noted that we shall try to study the field of the individual's consciousness as a working complex with its structures and processes and meanings and claims. We began this task in the third chapter; we should now be able to carry it through systematically and without bewilderment.

A *structure* which immediately attracts our attention is the contrast between the knower and the known, a contrast bridged by what is usually spoken of as the cognitive relation. There are, quite obviously, levels of this structure. The first level is perception; a higher level is a conceptual theory of an object.

In our study of natural realism we became acquainted with the structure and meanings characteristic of perception. We were later to conclude that, while there was a profound truth in this structure and these meanings, the situation was not completely understood by common sense.

On the knower side of this contrast, we can discover the empirical self with its interests and its sense of bodily set and attitude. Thus a short time ago when I was trying to catch a hen whose cackling was disturbing me, I had a very definite sense of myself and of my bodily attitude toward the hen. To speak in a technical way, my self-experience was flooded by motor sensations and dominated by a purpose. Over against me was the changing complex of characters which *meant* hen to me, that is, a thing as real as myself which was dodging around and trying to escape my clutches. The reader's imagination can surely work out in detail the mean-

ings which illuminate the individual's field of consciousness. It is the possession of these structures and meanings which makes consciousness what it is to the epistemologist. It would seem that consciousness is a kind of complex which can mould itself upon the situation in which the individual is and reflect its structure into itself. That a certain perceptual *appearance* means to me "hen" depends upon what the psychologist calls the acquirement of meaning through association. A whole grows up in an interpreted way. We must never forget this interpretative richness of consciousness. To neglect it is to make knowledge an insoluble riddle.

On the known, or object, pole of consciousness there develops in the above described fashion the category of *thinghood*. The essential meanings, or elements, of this category are not difficult to discover. A thing is a *continuant*, something which endures much as we do and which is spatial and resistant. It moves as a unit and can be pointed at. Now there is nothing mysterious in any of these elements, nothing which cannot arise in consciousness in our constant dealings with things. It would seem that in these meanings consciousness develops a valid interpretation of the organism's surroundings. Since these traits are general, or generic, they apply to all the objects to which the organism is responding. Within this framework arise and are assigned those specific traits which distinguish one thing from another.

Into the study of the generic development of this structure and these meanings we need not enter. That would carry us too far into detail in both psychology and logic. As epistemologists, we have a right to recognize their presence and their empirical character. We should also note that this structure and these meanings are used in perception by everyone. The result is what we have called natural realism. We are outward-looking and interested in *things* which we appear to apprehend. The underlying processes and developments are hidden or not known.

Upon this structural foundation within consciousness more

complex meanings and distinctions are reared. Things form together the spatial-temporal-causal system of the external world which the knower seeks to comprehend under the guidance of sense-perception abetted by experimentation and reflection. Here we enter upon the scientific level of knowledge. It is interesting to note that the knower, as an organism, is considered a part of this physical system.

But there is a certain ambiguity about the knower. The individual's field of consciousness, which we have been examining, is the seat of conscious, or explicit, knowing. And it has been one of the problems of philosophy to relate it to the organism or, rather, to understand its relation to the organism.

As natural realism breaks down under reflection, consciousness grows to include the whole field which we have been examining with its structures, claims and meanings. Each man's consciousness is a centre of experience and cognition. While the physical world forms a unitary system, this other domain does not. Of it, *pluralism* is characteristic. In the one domain we seem to have a large measure of continuity; in the other, discontinuity is the feature. Communication between person's minds is by means of the organism as in speech, gesture and writing.

The results of what I have called descriptive empiricism must not be confused with Berkeleian idealism. Berkeley ignored the significance of what I have called thinghood and discarded as illusions those meanings of independence and commonness on which I have laid stress. Hence he could not think of perception as an interpretation of a thing.

Two Dimensions of the Field.—Descriptive empiricism finds that the individual's consciousness has two dimensions which may be called the *co-existential* and the *temporal* respectively.

We have already indicated a characteristic contrast in the co-extential dimension, *viz.*—that between the percipient and the objects perceived. And we have noted that this

concrete contrast lends itself to the introduction of meanings. Thus the objects perceived are interpreted as substantial and independent realities in definite relations with one another, while the percipient is similarly interpreted. The adult, certainly, lives at this level of outlook.

But the field of consciousness has not only a co-existential structure but also a temporal growth. Objects acquire meanings and absorb new data. We learn more about things and they change for us accordingly, although we are convinced that we now interpret them and know them better than we did before. Thus the sun is perceived as a round disk in the heavens but careful study has persuaded us that it is actually tremendously large and millions of miles away from us. We have good reason to believe that there is no contradiction here because, if the sun is this large and at this distance, we should perceive it the way we do.

The temporal dimension of consciousness brings home to us the fact that adequate knowledge is something slowly acquired. It introduces us to the part played by wider experience, by comparison, by reasoning. From this point of view we realize that knowledge is not an immediate and simple affair but a resultant of effort. It is a matter of accumulation and of increased interpretative insight.

The philosophical movement called pragmatism has laid decided stress upon this temporal dimension of consciousness. It has pointed out that knowing is an enterprise of a concrete sort arising as an attempt to solve a problem and that it involves instruments like perception and ideas. The value of ideas lies in the fact that they are substitutes for immediate experience. By them we can mean things not present and we can condense and select our experience. In this fashion our experience deepens and accumulates until we become masters of a wide range and are able to think penetratively and extensively.

What occurs for the individual has also occurred for the race. As our experience enlarges, we know more about things.

In like manner, we can compare by means of history the idea of things held in the past with those held at present. How little was known of the chemical constitution of objects even a few centuries ago! Again, how ignorant people were of the causes of disease! Each generation can inherit what has been learned and add to it something new.

It is interesting to point out that the co-existential dimension of consciousness favors realism because it is pervaded by realistic meanings and attitudes. Until we reflect a little it even favors natural realism for we seem to ourselves to see or become aware of, things in a sort of immediate way. There they are; we can refer to them denotatively, this book, that table, this person, that vase, etc. But attention given to the temporal dimension soon makes us aware that knowledge is genetically not the immediate sort of thing it seems to be. We note the growth and change in our ideas of things. We become conscious of the silent processes which condition our knowledge of the world. A mediate realism tends quickly to take the place of the immediate realism of common sense. Knowledge is now considered an affair of ideas and concepts. We know by means of, and in terms of, ideas. But knowledge is just as direct as ever in its references to objects and in its claim.

A Closer Study of the Cognitive Relation.—We have called attention to the structure within consciousness at the level of perception in which the knowing self is set over against the object perceived. Because, at this level, the content of perception is not distinguished from the object of perception, it seems as though there were a *compresence* of a literal sort between knower and known. This compresence has been called the cognitive relation.

Recent thinkers have used such terms as *awareness, consciousness of, contemplation, minding, perceiving,* for this compresence of knower and object. Thus I am aware of this book. I contemplate it. S. Alexander, a very able contemporary thinker who inclines to a restatement of natural

realism, speaks of enjoying the self and contemplating the object. Lloyd Morgan talks of the *ing* and the *ed* sides of experience. The subject side is minding and the object side is minded. Thus perceiving implies something perceived; remembering something remembered, etc.

In this structure and distinction we obviously have something very important for epistemology. We must ask ourselves, however, whether we have here a literal relation between the knower and the object or an interpretative reference to the object. We shall speak of the first as involving an *apprehensional* view of knowledge. I mean that this view implies that the object itself is literally present to the knower in much the same way as a table is present to those who are sitting at it. The opposed view maintains that cognition is a selective interpretation of an object which is not literally given in consciousness. We intend, or mean, an object, this intention being at the perceptual level bound up with the motor set of the organism perceiving. Thus I literally "look at" this tree before me. Others can note what I am doing. Thinking of an object in its absence from the neighborhood of my organism is an act reared upon the tendencies and structure of perception; it is simply more complicated.

We can readily distinguish three possibilities at least with regard to the cognitive relation. The first is the idealistic position and holds that to be is to be known. For this view, cognition implies a relation which makes the object known dependent on the knowing. The customary formulation of this view of the cognitive relation is that it is *internal* and makes the object in some sense an adjective of the knowing mind. Both terms of the relation are mental for this philosophical tradition. The second position maintains that the cognitive relation is *external* and that the object in no sense depends upon its being known. This is the theory held by what is called the new realism, which is clearly a revival of the essentials of natural realism in opposition to idealism.

And then there is the third possibility, which I myself favor and which is called critical realism, which denies the literalness of the cognitive relation and makes the distinction between the content of knowledge and the object of knowledge. The knower selects and means the object, and knows it in terms of a cognitive content, but such an act of knowing does not involve the literal presence of the object known. It will be noted that these two kinds of realism have much in common and yet that they differ profoundly in their views of cognition and the cognitive relation. We shall have more to say of this contrast when we examine in a later chapter the epistemological positions of the present.

The Distinction between Things and Ideas.—Since this chapter is devoted to the distinctions within the individual's consciousness, it will be worth our while to devote some time to a contrast which has developed within consciousness as a result of knowledge. We know physical things and, in another fashion, we know our consciousness. It would seem that we intuit, or experience, the various features of our consciousness in the sense that they are open to our inspection; while we know objects by means of, and in terms of, such features. There is a givenness about the one domain that does not hold for the other. At least, this is the conclusion to which we must come if natural realism breaks down and we do not resign ourselves to idealism.

Each individual is seemingly confined to his own consciousness in an existential sense. He cannot share the feelings, emotions and thoughts of another in any literal fashion. Sometimes this has been denied, especially by those whose epistemology would make such existential isolation involve the denial of knowledge of that which lies outside consciousness. Thus the new realists in America deny the existential exclusiveness of minds. For them, two people can literally share the same idea. But, in spite of their asseverations, the older tradition and the tradition of psychology on this point seem the better founded. Thus I agree with Miss Washburn,

"That the mind of each human being forms a region inaccessible to all save its possessor."[1]

This position must not be misunderstood. There is no denial that we can know and appreciate the thoughts and feelings of others but only that we can existentially possess those thoughts and feelings. Perhaps Miss Washburn's term, inaccessible, was ill-advised. I do not think that another's consciousness is hidden from my knowledge but only that it cannot be a part of my consciousness.

Let me, again, call attention to the fact that I am distinguishing consciousness from mind. Consciousness is a part of mind but not the whole of mind. And by consciousness I mean the *empirical field which one experiences* at any one time, a field which has a unity and an openness to awareness. Knowledge resides in this field so far as it is actual and not merely potential, but the object of knowledge is not in this field except in introspection.

It is well, once more, to note that the term, consciousness, is somewhat ambiguous, especially in the English language. To be conscious of means to be aware of; and this expression has a cognitive significance. It is very natural that many epistemologists—especially those who are trying to carry through some form of natural realism—should identify consciousness with these acts of awareness. My own thinking has compelled me to consider these acts of awareness very complex and inclusive of perceptual and conceptual content. In short, it seems to me preferable to keep the term consciousness for the whole field with its structure and contents and to recognize that "to be conscious of" is a *function* within that field. Once the distinction is made and understood, there should be little difficulty about it.

We are now prepared to appreciate the existential contrast

[1] M. F. Washburn, *The Animal Mind*, p. 1. R. B. Perry has written the clearest attack upon this position in his *Present Philosophical Tendencies*, chap. XII. I suggest that he confuses knowing and being present in consciousness and thus begs the question or, rather, merely applies his epistemology in an *a priori* fashion.

between the realm of consciousness and the realm of physical things.

It has become a commonplace that the elements of consciousness do not have the same properties and characteristics as physical things. Thus physical things have size and weight and offer resistance. These same statements cannot be made of the contents which we can discriminate. Weight as a *meaning* does not itself have weight. Such meanings as size, location and causal efficacy apply interpretatively to objects. It is to objects that they are directed from the first. And it is absurd to direct these meanings upon themselves and to say that a meaning, or content, has size, locus, causal efficacy, etc.

This distinction will have considerable significance for our own theory of knowledge, for it will lead us to assert that science is right in believing in a *stuff* which, through organization, constitutes the physical world. In consciousness, itself, we assert traits of physical things which we do not assert of consciousness. It would seem to follow that we apprehend, or understand, ideas in consciousness by means of which we know things outside of consciousness. Ideas must be distinguished from things.

The distinction between thing and idea has been very definitely developed by psychology. Consciousness comes to be a term which covers all contents which are experienced or which are capable of being experienced such as feelings, sense-data, meanings, concepts, etc. And opposed to this varied class of contents is the physical world as this is somehow known. The psychologist does not bother his head very much over the problem of how the physical scientist can know his realm. He is, himself, a specialist and simply follows the logic of his own field. But it is obvious that the epistemologist has this task assigned to him.

Existence versus Cognition.—We are now in a position to call attention to a contrast whose full significance has often been neglected. We have maintained that for psychology

consciousness is a realm of existents of a peculiar sort which it is its duty to study. For the physical sciences, physical things also constitute another kind of realm of existents. As to the relation between these two realms we shall say nothing at present, only declaring that we shall give good reasons for rejecting Cartesian dualism. We shall, in fact, find many excellent reasons for holding that the organism includes these contents which are really qualitative events in it.

Now the sciences have laid so much stress upon existence that they have ignored cognition. The reason for this is easily seen. Science takes cognition for granted and concentrates on its objects. But psychology, unfortunately, followed this example. It had to, in one sense, for that was a part of its duty. *But it should have seen that cognition was a peculiar function of consciousness;* that it had to deal with something which was unique and had a special task to perform.

Cognition is built up around reference to an object. This reference to an object rests upon a structure in consciousness and upon activities of the organism accompanying and finding expression in this structure. In the present chapter we called attention to this structure in the contrast between percipient and object perceived, subject and object, knower and known. We sought to point out the growth of this structure and the meanings which qualify both poles. Thus I look at this apple tree and estimate what limbs must be lopped off in order to let the sun into it. The capacity to develop meanings and to apply these meanings is the gift of consciousness upon which cognition depends. It is within consciousness that we develop the idea of an independent object; and it is within consciousness that we interpret such an independent object by means of, and in terms of, discriminated characters.

We shall see that one of the weaknesses of much of epistemology has been its timidity in regard to consciousness. It has not studied its structures and meanings empirically and carefully enough. Berkeley's attack upon Locke impressed

it too much. Hume, for example, studies consciousness almost entirely from the existential standpoint as consisting of impressions and images. But I do not hesitate to assert that the important fact for the philosopher is that the organism uses and develops these impressions and images for the sake of cognition.

The suggestion which we shall put forward is that, in consciousness, we can mean and know objects which transcend consciousness. To those who stress only the existential aspect of consciousness and think of it as only so many sensations and images, this view is nonsense. To them we must reply that they have completely ignored consciousness in the concrete with its structures and meanings. We can even add that psychology is beginning to see that isolated sensations and images of the Humian type are artificial entities. The field of consciousness at any one time is a complex structure expressive of the functioning of the organism.

In the next chapter we shall try to explain the nature of knowledge on the basis of the empirical analyses we have made in this one. We shall seek to show that cognition involves its own peculiar kind of transcendence of consciousness, a transcendence which is in no sense existential. To know objects which are outside our consciousness existentially, we do not need to get outside our consciousness in any but a cognitive way. That is, we make a reference and a knowledge-claim. Thus to think truly of Paris I do not need to travel in some mysterious mental fashion to Paris. It is enough that Paris is the object of my thought and reference.

It is very necessary to bear the above points in mind and to appreciate how these distinctions appear in some fashion even at the level of practical perception. In perceptual situations I am looking at objects like books and trees. There is a structure here which we must acknowledge and try to analyze. To call it animal faith, as Santayana does, is very poetic but misleading. There does not seem to me to be any mysterious leap to a transcendent object but a contrast and

a development of that contrast by meanings. Nor is there a mysterious inference from the content of perception to the object of perception. In fact, the distinction between the content of perception and the object of perception is a later development due to the application of reflection to the standpoint of naïve realism. As soon as we have perception we have the interpretation of objects.

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CHAPTER X

THE NATURE OF KNOWLEDGE

Perception an Affair of the Organism.—We have good reason to believe that we now have our material fairly well in hand. Let us attempt to get as clear an idea as possible of the nature of knowledge.

In order to free ourselves completely from the misleading associations of Cartesian dualism, it may be well to begin with the situation in perception. After that, we can pass to the kind of knowledge we have in judgment.

Perception is an affair of the organism. The organism co-operates with the influences coming from surrounding things so that stimulus meets with a *directed response.* The percipient organism attends to, turns toward, selects, behaves in relation to, things, and thus makes them its objects. Hence, we should not speak of things as though they were *objects* in their own right. They are existents in their own right, but they are objects of the organism's behavior and conscious attention. "Object" is thus a relative term and implies an activity focussed upon a thing. It is for this reason that we can speak of a thing as an object of perception or of thought.

The following diagram indicates the double relation between a thing and a percipient organism:

The lower, continuous line represents the causal relation from the thing to the organism, while the upper, discontinuous line represents the cognitive, perceptual relation. The directions of the two lines differ. One is *from* the thing; the other is *to* the thing. The cognitive perceptual relation is one of behavior and conscious attention directed to the thing.

We have sought to examine this situation both externally and within consciousness and to see how a proper view blends these two in an intelligible manner.

Is it not true that this position rises above the historical controversy between naïve realism and subjective idealism? As against subjective idealism, it stresses the active reference to an object which is believed to be external, independent and lasting, and it holds that this object is interpreted in consciousness rather than given in consciousness. As against naïve realism, it maintains that the apparent givenness of the object of perception in consciousness is an illusion due to the structure of consciousness in perception and the lack of reflection upon the conditions of perception. In other words, the content of perception is identified with the object of perception because they are, as yet, not distinguished. In consciousness, cognitive reference and interpretation dominates over the existential situation. Neither the range of consciousness nor its function is at first understood. Only reflection brings the whole situation clearly into view.

It is interesting to note that recent psychology is increasingly inclined to regard consciousness with its structure and references as an expression of organic activities in actual situations. Perceiving and thinking are activities. What is active? Evidently the organism, the conscious person. We must, therefore, think of the field of consciousness as sustained by the brain-mind of the organism in its response to external things. To the empirical self within consciousness it would be as though it *saw* things or as though things *appeared* to it.

The Synthetic vs. Both the External and the Introspective View of Perception.—A good beginning in these matters is so important that we shall run the danger of some repetition. It is very essential, as we said, to free ourselves from the tradition that perception is merely the apprehension of a mental state. The separation emphasized by Descartes between mind and matter led to this notion that the mind was in

perception brooding on its own contents. We saw that Locke speaks of ideas as the objects of the understanding when a man thinks. Berkeley continued the same tradition and dropped what seemed to him the useless realm of matter. Hume wrote of impressions and Kant of phenomena. In every case, the total situation was ignored or misunderstood. Philosophy started off on a non-realistic tangent, and it is only recently that it has been able to make a fresh start.

If our own analysis is correct, these contents, or ideas, *are elements in perception rather than objects of perception.* They constitute the way in which the object is characterized in perception instead of being the object of perception. Or, to put it in another way, they are the appearance of the object of perception. We must get rid of the purely introspective tradition that the idea is the object of perception.

If, as in introspection, we break loose from the natural interests and direction of behavior of the organism in perception and swing our attention to the characters like color and shape, which we can note, we can speak of these characters as *objects of awareness.* But they are not objects of perception. When we consider these characters for their own sake and do not perceive through them, we are not perceiving in the strict sense. We are neglecting meanings, beliefs and interests which constitute the affirmation of a physical object.

It is difficult to get a good terminology which is at once expressive and simple. With the above suggestions in mind, the distinction we have used between the object of perception and the process of perception with its use of discriminated characters of perception is satisfactory. It is the object which we mean and select and which we characterize in terms of the content of perception.

The synthetic view enables us to harmonize both the behavioristic observation that an organism responds to an object and the internal experience of meaning, noting and interpreting an object.

Perception Is Usually Practical.—The content of perception or the appearance of the object serves usually as a guide to conduct. It is not surprising that this complex absorbs all the meanings which arise as relevant to the thing. A razor is something to shave with. An apple is something to eat. All the information which we acquire joins itself to the sensory nucleus and interprets the object we seem to ourselves to be apprehending and which we are certainly in some sense knowing. As both psychologist and logician point out, judgment enters into perception. We think the object by all that we come to know about it, what it does to ourselves and to other things, its spatial relations, structure, etc. Thus thinking supplements perception.

It is only as science replaces our usually practical attitude and interpretation of things that an effort is made to get data which will enable us to penetrate more deeply into the nature of the object. Analysis, comparison, experimentation and theory are operations used under the control of the desire to know; and everyone is aware how much additional knowledge is thus gained.

What, Then, Is Knowledge?—We must now press on to a determination of what knowledge is when it is made explicit as regards both its conditions and claims.

Perception is a primitive sort of knowing in which sensory data are corrected and interpreted in relation to an object. But we must pass to explicit, judgmental knowledge as we find it in science before the actual situation is understood.

Let me offer a verbal description of knowledge. Knowledge of the physical world is an interpretative comprehension of the characteristics of things by means of, and in terms of, characters within consciousness. Here we have the factors in knowledge distinguished and the peculiar claim involved in knowing made explicit. When I claim to know a thing, I make an assertion, backed up by belief, that an idea of mine reveals the actual characteristics and relations of the thing.

I assume therein that the real world has a structure which I can think or intellectually grasp.

Whence do we get this idea? Clearly from perception. The external world seems to us there to be revealed or to appear, and we gain the notion that it has a nature and structure of an intrinsic sort which can be noted by us. All reflection and deeper thinking has done is to confirm us in this view by the detail which has been worked out and tested. There is nothing in science which, when properly understood, condemns perception. We should see the sun round, and things should look small to us at a distance, and a stick should look bent in water. Why? Because perception involves a personal, biocentric perspective. It is this perspective which science seeks to overcome by measurement and axes of reference. Descartes did not appreciate this relation between perception and thought as it has been worked out by modern logic and psychology.

The thesis is, then, that the very nature and claim of knowledge is derived from what seems to be the situation in perception. We interpret things and assign meanings to them at that stage. We but carry this further in thought. To put the situation very succinctly, it is by knowing that we learn that we know and what knowledge is. It is by reflection on the conditions of knowledge that we can learn to the full what the instrumentalities and claims of knowing are. This is but another way of saying that epistemology works upon the fact of knowledge.

I wish now to point out that there is a development of our idea of knowing. At the level of natural realism, while there has still been little, if any, reflection upon knowledge, knowing appears to be an apprehension of an object. The object seems to be given in a literal way. This fact is very important, for both subjective idealism and the new realism build upon it after their own fashion. But we have argued that the breakdown of natural realism forces us to rise to a more mediate view of knowledge. Knowledge is then seen to be a grasping

of the nature of the object by means of and in terms of a content. The claim remains, however, the same.

There are, of course, many cases of knowledge besides perception, and, in these other cases, this instrumentality of contents comes out quite obviously, so obviously, in fact, that even common sense is inclined to acknowledge it. Thus in knowledge of the past, say of the deeds of Lincoln, we are at once inclined to reject the notion that these deeds are themselves given to us in an existential way. We feel that they are given cognitively and by means of ideas which we have secured by reading history. In the same fashion, knowledge of distant objects which cannot be perceived is thought of as being mediated by our ideas. We were once there, or people have told us about them. Again, the knowledge of the chemical and physical structure of things, as worked out by science, far surpasses the reach of perception alone. Yet it is knowledge.

The essential thing about knowledge comes to be the *revelation of the object*. Whether this is due to the literal entrance of the object into our consciousness, as seemed at first the case, or whether it is a revelation in terms of a content is a secondary matter which the facts must decide. In neither case can knowledge be more or less than knowledge, although its grasp may not be quite the same in the one case as in the other.

The structure of perceptual knowing is developed and carried over into what is often called representative knowing, that is, the knowing of objects in their absence. In this connection, I might call attention to a mistake which many philosophers have made. It is the idea that representative knowing, or thinking, is just an effort to reinstate the original experience. It may be this, as in memory, but it is often an attempt to penetrate by more data and reflection very deeply into the nature of the object. It is really nonsense to assert that scientific knowledge is merely a summary of perception. The tradition of Hume has encouraged this former notion

among scientists as, for instance, with such a writer as Karl Pearson. Empiricism was seldom entirely free from this error, which is characteristic of phenomenalism. Whether presentative or representative in mode, knowledge is direct in its aim.

The Mechanism of Knowing.—We can readily distinguish three factors in an act of knowing: (1) the selection of an object, (2) the assigned idea, and (3) the belief. In the background of all this is the self as knower. These three factors play different rôles in the one complex experience. As we have suggested, the best way to appreciate them is to begin with the level of perception and work upward.

We have laid so much stress upon the structure and meanings of consciousness in perception and its harmony with the situation and behavior of the percipient organism that we need say nothing more about it now.

As conception replaces perception, we build up a construction of an external world the parts of which can be measured and located with reference to each other and not merely with reference to a particular percipient. Such a system of reference is used in social intercourse. Thus I speak to another person of a house located on a certain street in a certain city. The technique of such systems of reference is familiar to all these days. And we know how it has been developed by physics and astronomy. The object thus selected is interpreted in terms of certain predicates which are now consciously assigned to it. In this way I *think* the object. We may say that knowing an object at this level is thinking it in terms of predicates. These predicates are supposed to give the actual characteristics and relations of the object. The impulse, which we noted at the level of perception, to assign characters to objects continues even though the assignment is made more critically.

In an act of knowing, then, these three factors, selection of an object, assigned characters, and belief, work organically together. Just as we perceive an object in terms of its appear-

ance, so we conceive it in terms of its corrected appearance, which may be called the predicates of judgment. There is no doubt, then, that I am capable of distinguishing an external realm from my thoughts and beliefs. It is the constant aim of the scientist to apply the proper predicates to the object of his thought? What are the proper predicates? Surely the predicates which reveal its structure, comparative size and behavior. We are convinced that, when we think objects in certain ways, we think them as they are. We are trying to do in a sophisticated way what perception has suggested to us.

The Ambiguity of the Term Idea.—But we are not through with our difficulties. Philosophy found that it must make a distinction between two standpoints, and it became confused. Probably the Cartesian dualism with its assumptions to which we have already frequently referred aided in this confusion. The difficulty concerns the distinction between the use of the term idea as a discriminated character, predicate, or universal which we use in the interpretation of objects, and idea as a psychological existent or event.

In critical knowing we are quite aware that our minds are working and that these characters arise as elements in the total complex of consciousness but we are not concerned at the time with the question of their existential status. They are ingredients in the total act of interpreting the object. We think the object in terms of them.

It is the task of psychology to dwell upon this total act of interpreting an object and to study it as an *event* in the history of the organism. In so doing, psychology will take logical ideas and make them parts of psychological ideas or conscious events. But, clearly, this is a task which cannot modify the nature of the act of knowledge and its claim. It is a supplementary, scientific problem.

But the whole setting of epistemology in the seventeenth century forced this problem into the foreground. Logical ideas, that is, discriminated predicates, were flatly taken to be simple mental entities, that is, immaterial realities. Also,

it was supposed that these mental entities were the first objects of knowledge. It was a bad epistemology plus a very hasty ontology. We have, on the contrary, emphasized the actual situation in the complex act of knowing and have brought out the fact that these characters, universals or predicates are instruments of knowledge and not objects of primary knowing. In short, the characters which we discriminate and assign in a complex act of knowing are not other than they appear. The existential question is additional. But we are not to-day inclined to begin with the assumption of an immaterial substance. The organism seems, instead, to be the unit. At present, I can only assume that all characters used in cognition have a natural origin and locus in the brain-mind of the knower. Many of these predicates involve a large amount of construction and discrimination. They arise only at a high level of what we call mental activity.

It is to logic that we usually go for a study of the reflective level of thinking and knowing. The logician sees that the direction of cognition is objective and that the knower seeks to be under the control of things so that his thinking may not be arbitrary but moulded and conditioned by things as they are.

It would seem to be the business of philosophy and psychology, working together, to determine the *existential status of ideas.* That we know by means of their internally apprehended content seems undeniable. And that cognition does not assume, as Berkeley supposed, an identity of stuff between idea and object but, rather, an identity of character which comes out in our claim to think objects in terms of this apprehended content of ideas follows from this. In short, the existential nature of consciousness becomes an additional problem which can never justify a denial of knowledge.

It is really not at all surprising that a philosophy which began with a dualism of two kinds of substances and thought of *mental entities as the first natural objects of thought* mixed existential and cognitional problems. We, on the contrary,

realize that we think objects in terms of specific contents and that such thinking does not imply an affirmation of existential likeness. This assertion is directed against Berkeley's belief that, because an idea as psychical event can be existentially like nothing but an idea, we cannot know objects in terms of the characters of which we are aware. How important our stand against Berkeley's position is will be realized when we remember that the cognitive value of ideas was relinquished as a result of his analysis and phenomenalism flourished in Hume and in Kant.

It would seem to follow from all this that consciousness is a peculiar kind of reality whose very function it is to mould itself upon the world and to develop distinctions and references of a cognitive kind. The spiritual substance notion of the seventeenth century obscured this intrinsic nature of consciousness because it ignored the peculiar and basic relation consciousness has to the organism. A more bio-centric approach was needed. We shall see that a contemporary movement, called pragmatism, has aided here. Unfortunately pragmatism was weak in epistemology and was not able to make the final epistemological synthesis. It moved toward it, but was so engrossed in its controversy with objective idealism that it did not re-examine the possibilities of realism. In these matters—as in all others seemingly—the inevitable development is one step at a time.

The Reach and Precise Character of Knowledge.—Certain fascinating questions remain which quickly lead us to the borders of ontology. What is the reach of knowledge? And how should we distinguish knowledge from existence?

We have argued that an act of knowing is the thinking an object in terms of contents or characters which may be called *logical ideas*. We assign predicates to things; we conceive them in certain ways; we make propositions about them. All these expressions stand for essentially the same kind of act whose first stage we noted in perception. The significant fact is that we hold before our attention an understood con-

tent which we regard as revealing the characteristics and relations of the object. And the object is presented, or grasped, in no other way than this. To put the situation concisely, the object is not existentially given in consciousness but is known. When, in what follows, I assert that we do not apprehend the object in the act of knowledge, it is this contrast which I have in mind. It is not cognitive apprehension that I deny but existential apprehension. But I must not harp on this point. The reader should brood over it and seek to comprehend its exact meaning.

This critical view makes explicit the precise situation in which the human mind is with respect to external things. There is no use bemoaning the fact any more than it is worth while rebelling against any other ultimate fact which is beyond our control and a part of the ultimate structure of the world. But, in truth, it seems to me admirable and remarkable that the organism has been able to evolve this mechanism of knowing and has been successful in achieving and using data of significance for things around it. And, of course, the basis of this achievement must be the functional relation between the organism and the environment and the evolved abilities and mechanism of the organism.

It follows from our analysis that the object of knowledge is one thing and the knowledge of it another. Suppose that I gather all the knowledge about this table before me that I can glean from physics, chemistry and botany; still this systematic knowledge is not the table. Because it is knowledge, it is a revelation of the characteristics of the object but it is not existentially the object.

It has taken the human mind a very long time and tremendous effort to make this distinction between cognition and existence and to carry it through systematically. When it was only half carried through, as in early representative realism, confusion resulted which threw the mind back into phenomenalism and idealism. It was then maintained that knowledge does not involve a peculiar kind of transcendence.

What is it about the object which is revealed in the logical contents which arise in our consciousness and are used in cognition? The only way to get an answer to this question is to interrogate the actual knowledge-claims made by science. Roughly speaking, we seem to know the structure, the relative quantity, the relations and the behavior of things. We shall go into this question in more detail in our treatment of cosmology. We shall there call the basic distinctions of knowledge the categories and regard them as corresponding to, or revealing, the structure or form of physical existence.

We are now prepared to broach a second question which, as we said, takes us to the borders of ontology. Have we empirical reasons to maintain that this cognitive revelation has its reach set by its character? My own answer is affirmative. Let me explain.

If knowledge is a grasping of the temporal order of events, the relative sizes of things, their causal and spatial relations, their internal structure and their behavior, it is seemingly only these characteristics of the physical world which can be reproduced and mentally grasped. We might say that these characteristics constitute the *form* of the physical world and the form, alone, can be reproduced and thus revealed. Here, again, we are skirting the edge of ontology.

But is the world merely form? Is it not *formed stuff?* The empiricist tradition has led many thinkers to look askance at this idea of stuff in spite of all that science says about matter and energy. What can we say to justify it and interpret it?

First of all, we know things by means of contents which reflection informs us arise in consciousness. Thus when I assert that dynamite explodes and blows rock to pieces, it is the rock as an external reality which I am thinking in terms of these meanings. I can later turn my attention to the meanings for their own sake and make them objects of thought. It is clear that they are not themselves physical objects and make no claim to be. Thus it is nonsense to say

that a meaning explodes. Empiricists have never done justice to this distinction which falls in line with the objective reference of knowledge of physical things. To assert that a body is active involves the meaning, activity, as an interpretative predicate; but this does not imply that the meaning must be active. So to hold ignores the distinction between the content of knowledge and the object of knowledge.

It is this recognized difference between characters and the physical object which lies at the foundation of the belief in substantial existence. Stuff is but another term for existence. The physical world is a conserved realm in which all sorts of executive changes arise and which is differentiated into an infinite variety of things. Now we have sought to demonstrate that to know is not to be, that cognitive apprehension is not existential apprehension, that knowledge grasps the characteristics of things *but must fall short of being the things*. Things are formed stuff, and it is the form which we cognitively apprehend or which is revealed. Nevertheless, we must recognize that knowledge is not an existential givenness, or intuition, of the object. It is a cognitive apprehension, if you will, but not a literal apprehension of the sort natural realism gives the human mind at first the illusion of.

Knowledge of Other Persons.—The problem of the nature of knowledge of external things is so basic that we have devoted our chief attention to it, believing that many associated problems would be less difficult to handle once we saw our way clear in regard to this primary one. Now that we have the essential distinctions in hand, let us examine the question of the nature of our knowledge of other persons.

It is far better to speak of other persons than of other minds, for the simple reason that we know nothing of disembodied minds, and "persons" is a far more realistic and localizable term than "minds." We desire to escape from the intangible influence of Cartesian, or traditional, dualism. The exact nature of mind is an ontological problem which

must be taken up in its own place. We may mention the fact that the drift in psychology is to regard mind as a term for operations and capacities intimately bound up with the nervous system of organisms and directly expressed in consciousness.

When we come to the treatment of the mind-body problem, one of the points we shall need to make is the vagueness and inaccuracy of the general use of the term mind. A warning in this place will, I hope, be of some avail. Before the student can make any advance he must be ready to brush aside the cobwebs which have accumulated through the ages and look at the facts in the light of science and epistemology.

When we say that persons have minds, we should not mean that they carry around with them a peculiar kind of *thing* called a mind. We mean, rather, that persons have thoughts and act intelligently, using the word thought for any phase of consciousness. Consciousness and intelligent action rest upon a foundation intrinsic to the person. And a person is a developed, trained, human organism.

How do we know other persons? In part, just as we know other physical things, by observation. Hence our rejection of idealism has relevance for this special domain. We can study the behavior of persons just as we study the behavior of sticks, stones and animals. In all these cases, there is objective reference and the need to distinguish between content and object. But there is another way to gain knowledge of persons; and that is by communication, by language, that is, by understood signs. It is absurd either to deny or to belittle the importance and significance of this condition of additional knowledge. It interacts with the more primitive condition, that of observation, in determining our complex knowledge of other persons. We can learn what people think by their own confession. We can ignore the cases of lying as not bearing on epistemology.

We think, and our body acts overtly in accordance with our thought. This correlation we early learn to note. As a

matter of fact, intentions and actions are noted together in other persons probably sooner than in ourselves. This genetic question is interesting but need not be taken up now. The main point is that we interpret other people all the time in a sort of complex way. You can notice a baby looking at its mother or nurse in this interpretative fashion. In short, we know *persons,* not minds and bodies as separate entities.

But while communication is a condition of additional knowledge of the plans and attitudes of other persons, it is of special interest to us here because it suggests to us that we have a right to believe that other people have *experiences* similar to our own when they use the same words. When a youth asks a girl whether she loves him after confessing his own love, and she replies affirmatively, he believes that the tender passion is holding her in thrall as it is him, that similar emotions and hopes reign in their minds.

Here we have a new kind of knowledge which we must add to knowledge of things. We may call it knowledge of experiences. It is only in the case of things having consciousness, and those nearly like our own—all this being a matter of knowledge-claim or belief—that we make this new claim. It is not a knowledge of things in terms of a few abstract characters, but a knowledge of contents in terms of contents or a believed similarity of experiences in two consciousnesses. Persons are richer objects for human knowledge than are inorganic things. This distinction connects up with the one we have already made between things and consciousness. We find that we are common knowers knowing the same world in the same way by the same means. But here, also, there is objective reference. In this knowledge, likewise, we transcend our own mind cognitively, though not existentially. All this means, let us remember, is that we know objects by means of contents and a structural mechanism in ourselves. There is no existential miracle in knowledge. Those things which do not have these contents and this mechanism cannot know what is outside them. And this structure and this

mechanism is intimately bound up with sense-organs and motor responses, in short, with the structure of the organism. It is probable, for example, that something analogous to perceptual knowledge exists in other animals in descending degrees.

There are many fascinating questions along these lines of enquiry but we cannot linger upon them. Our purpose has been to indicate the general nature of knowledge and its kinds. Our conclusion has been that, without consciousness, knowledge would be impossible, but that we know objects outside our own consciousness.

REFERENCES

In addition to the references given for the preceding chapter, the following are suggested:

Montague, *The Ways of Knowing*, chap. 8.

Perry, *Present Philosophical Tendencies*, chap. 12.

Rogers, *What is Truth?* chap. 1.

Sellars, *Evolutionary Naturalism*, chaps. 2 and 3.

CHAPTER XI

PRESENT EPISTEMOLOGICAL TENDENCIES

The Value of a Summary.—In the preceding chapters we have been engaged in the effort to gain perspective in epistemology. By means of history and by aid of an analysis of the structure and references characteristic of consciousness, we gradually attained a definite view of the nature and conditions of knowledge. This view is the one commonly called *critical realism.* But an Introduction to Philosophy must acquaint the beginner with the other positions currently held. Two reasons for this policy can be advanced: (1) without such a statement of contemporary positions the student cannot appreciate the references contained in other books and in the remarks of people educated in philosophy, and (2) he cannot make an intelligent choice between positions until he has an idea of all of them. Moreover, a summary should bring the whole subject together and make it more definite. Let us not forget that the learning of philosophy is a matter of growth.

Epistemological positions have little meaning for a person until he has felt the force of epistemological problems. What meaning can idealism have to one who has no knowledge of its rise? To an American impressed by modern industry, it would seem, surely, the veriest nonsense to assert that the physical world is but an idea. Does he not *see* the firm and stable world around him, and does he not know from sad experience how brutally real it is? Yet people with other traditions might not feel the same conflict with their natural outlook. However that may be—and probably mood and training have much to do with first plausibilities—the student who has carefully followed the steps of our argument and

has done some thinking for himself will, I am sure, be now ready to compare epistemological positions understandingly.

The Nature of Epistemology Restated.—Epistemology has been such a perplexing subject that even philosophers have at times been discouraged. Some few have even gone to the extreme of crying out against epistemology. We feel it necessary, therefore, to give some space to a brief statement of its exact nature.

This science has nothing to do with the determination of the facts or results of the particular special sciences. It is, instead, a reflective science which takes for its domain a study of the nature and conditions of actual, human knowledge. It moves within an already complex experience and seeks to answer specific questions about knowledge in the light of the actual knowledge already gained by the physical, mental and social sciences. It is neither logically nor temporally prior to them but is, like philosophy as a whole, a reflective examination of their general results in the attempt to answer inevitable questions about the *nature, locus, development, conditions and reach of knowledge.* And the more we know about nature and man, the more we are able to answer these questions. I do think that the recent advances in biology and psychology have aided the epistemologist very much. A corresponding improvement in logic which has brought it more in line with modern science has also been of great assistance.

Knowing is clearly a natural event which somehow takes place in the human organism. And the various sciences take the fact and possibility of knowing for granted and go on with their particular investigations. And they are quite right in so doing. Nevertheless, when the final interpretation of it all is to be made, decision as to the nature of knowledge is imperative. When we come to ontology and cosmology, we shall constantly see the light which epistemology throws upon ultimate questions. One who is an idealist in epistemology cannot be a materialist in ontology, for example.

We have stressed the question of the nature and reach of knowledge. Other thinkers have at various times stressed the conditions and development of knowledge. In the following presentation of contemporary theories we shall be obliged to give some indications of the general texture of the philosophy with whose epistemology we are concerned for this very reason. And it must be remembered that epistemology, *though a pivotal part of philosophy*, is only a small part of the whole.

A Working Division.—Just because there has been no settled opinion in epistemology and historical tendencies have been influential, it is really difficult to contrast positions in a clear-cut way. Fortunately, we have an unambiguous outlook to guide us. Taking our departure from this and noting deviations and denials, we can secure the following broad division:

- Realism
  - Critical Realism
  - Neo-Realism
  - Agnostic Realism
- Experientialism
  - Pragmatism
  - Positivism
  - Phenomenalism
- Idealism
  - Subjective
  - Objective

From the strictly logical standpoint, idealism and realism are in the sharpest opposition; hence I have placed them at the extremes. Experientialism represents a blurring of this opposition and a hesitation with respect to epistemology. The influence of idealism is always present in experientialism, but it may there meet with, and adjust itself to, a realistic tendency. Thus phenomenalism is in certain regards an agnostic realism; in others, a form of idealism. Something very similar holds of pragmatism, which has constantly swung between idealism and realism. In what I have called experientialism the epistemology is seldom clear-cut. The emphasis in pragmatism, for instance, has been upon the

office of ideas in human thinking and its dearest enemy has been objective idealism. Let us begin with idealism.

Two Kinds of Idealism.—We have had occasion to refer to idealism in two connections: first, while discussing Berkeley and, second, while indicating the speculative systems reared by the successors of Kant. It is really quite difficult to find a common denominator for the two. The chief one is opposition to a frank physical realism. In all idealism the object of knowledge is regarded as dependent on the knowing of it. The claim to know an object which transcends experience is considered inadmissible, and experience is a broad existential realm. Objective idealism has more admitted followers than subjective idealism.

Since we already have the historical background of subjective idealism or mentalism, we can now aim to bring out the logical structure and implications of the position. We have noted the fact that it is directed against physical realism of the kind defended in the first stage of representative realism. Since Berkeley was glad to destroy physical realism because he thought it led to atheism, he did not seek to improve upon Lockian realism.

If we take the basic principle of subjective idealism to be this, *to be is to be perceived,* we find that it asserts an *internal relation* between subject and object. In ordinary language, this means that we can know only the states of our own mind. We can put the position even more sharply by saying that it involves the denial that an individual can refer to, or know, anything outside of his own mind. But, then, how can I know that there are other persons even? It would seem that the social world disappears with the physical world. The logical outcome is *solipsism,* that is, the position that an individual can know only his own ideas and that he has no good logical reason to believe in other individuals. He is confined, as we say, to his own consciousness.

The difficulty which confronts the subjective idealist is of interest to us because it brings out the importance of the

organism. Deny a physical world, and you deny the organism. Now our means of communication, to say the least, seems to rest upon the organism and the senses. By destroying the organism, Berkeley left the self a homeless ghost, a mere spiritual substance. And since the physical world and sense-organs do not exist Berkeley was forced to postulate a supreme self to arouse ideas in us. Leibniz, a contemporary idealist, had the self produce all its own ideas in a sort of pre-established harmony with other selves. If we relinquish physical realism, we seem forced to such daring hypotheses as these.

But it would be foolish to take subjective idealism lightly. Able men have been wrestling with it for two centuries. We shall see that the new realism was a protest against subjective idealism. The question it asked was, Are these ideas really subjective and bound up with a knower? It tried to re-analyze experience in such a way as to leave out the traditional, mental interpretation.

Objective Idealism.—Objective idealism is a form of idealism which, as we saw, arose after Kant. The assumptions which determine it are not difficult to formulate. Kant accepted the position that we know only phenomena, that is, constructs which our thought in large measure constitutes. But he still retained a belief in things-in-themselves as sources of a sense-manifold. To hold such a position is self-contradictory because it involves the application of categories outside of experience or, as it is expressed technically, it involves the transcendence of experience. Causality is an *a priori* concept whose critical significance is *its use in experience.* And we must remember that Kant makes the Ego the source of the categories. The Ego is creative, basic. What more natural than the exploration of this creative source! Another point. The Ego of which Kant spoke tended to be universal. It is certainly not the organism. And it tended to have the same universality as the laws of science have in which he was interested. The chief problem was now the relation between the finite and the infinite self.

We may say that objective idealism was a position dominated by the thought of a universal or absolute mind. In my opinion, then, objective idealism was founded on two things: Kant's assumption of a universal consciousness, and the inability to solve the problem of knowledge in a truly realistic way, common to Hume and Kant.

The basic thesis of objective idealism is, then, that *thought is reality*. To study thought is to study the very structure and stuff of reality. But thought seems to exist at different levels of adequacy. At the lower levels we deal with *appearance* rather than with *reality* at its best and truest. The task of the philosopher is to pass by a sort of inner logic from the part to the whole, from the less real and true to the more real and true, and so to attain at least a partial comprehension of what reality is like from the standpoint of the whole.

Hegel was, perhaps, the most influential thinker of this movement. For him the basic philosophical discipline is logic; and logic consists of the intensive study of the dialectical development of the categories from the simplest and emptiest to the richest and most inclusive. This internal relation of the categories is logical and timeless. In fact, time is essentially appearance and without deep significance. The Hegelian movement spread to England and America, as well as elsewhere, and attracted some of the ablest minds. Usually, however, the form which it took represented a modification by other traditions and emphases. To-day, we usually associate Anglo-Hegelian idealism with the names of Caird, Green, Bradley, Bosanquet and Royce. A similar movement in Italy is led by Croce and Gentile.

From the standpoint of epistemology, the principles of objective idealism to note are (1) the denial that it has any meaning to try to transcend experience, (2) the treatment of the problem of perception as essentially a question of the interpretative supplementation of a partial datum by perceptual judgment until it fits in with a system of knowl-

edge, and (3) the doctrine of internal, or modifying relations, which brings it about that the part is transformed in the whole. Truth and reality are identical, and anything short of the whole truth is partially error and illusion. In short, experience is the ultimate term; and the really real is the absolute, or comprehensive, experience.

It is clear that the emphasis in such an outlook is upon the whole, upon the infinite and complete. Our finite experience is shot through with contradictions. Change is appearance, moral distinctions are significant for our human level of existence only, time is unreal. The real is the harmonious, the perfect, the all-inclusive. It was against this interpretation of the inner logic of experience that pragmatism arose as a protest. In many ways, it was a return to the older tradition of empiricism, but a return with a difference due to the intervening development of the biological, psychological and social sciences.

Experientialism.—There are many philosophical movements afoot to-day and for many years back which it is practically impossible to classify in terms of the contract between idealism and realism. Some of these positions are more sympathetic with idealistic traditions, others with realistic traditions; and even in the same movement we find one wing nearer to idealism and another wing nearer to realism. What they do have in common is the belief that it is impossible, if not meaningless, to try to transcend experience. The influence of Hume and Kant is still at work in a very effective manner. Under *experientialism* can be brought such movements as positivism, phenomenalism, neo-Kantianism, and pragmatism. None of these movements are sympathetic with speculative idealism.

Positivism is a form of empiricism in which there is a confident acceptance of the methods and results of science. Here, alone, do we have anything deserving the name of knowledge. In contrast to science are set the earlier stages of theological and metaphysical speculation, which sought to explain events

in terms of spirits and essences. Thus positivism is an outlook dominated by the movement of the special sciences and averse to speculation. It is skeptical of the significance of the search for anything which can be called transsubjective or metempirical. It does not want to raise the question of whether anything lies beyond experience; and it uses experience as a sort of blanket-term for that within which scientific method can work to give tested knowledge. It is clear that we have in positivism an outlook which reflects (1) the prestige of science, and (2) a skepticism of the aims and achievements of traditional philosophy. While philosophy is partially to blame for the rise of such an outlook there can, I think, be little doubt that positivism represents a hasty conclusion rather than a systematic position. Positivism may best be associated with the name of Comte. A good English representative of the outlook is G. H. Lewes.

Phenomenalism is, logically, little different from positivism. In fact, positivism is virtually a form of phenomenalism. In both, there is the desire to keep within experience. It is usual to speak of Hume's position as phenomenalism; and Kant's emphasis is of the same sort. We cannot transcend experience for only in relation to it does knowledge have any significance. This point of view should be very familiar to us now. And we should not be surprised to find phenomenalism swinging between the extremes of sensationalism and logical construction of a very abstract sort. A good example of modern sensationalism is the position of Karl Pearson in his *Grammar of Science*. He asserts that objects are combinations of immediate sense-impressions and past, stored impressions. And the laws of nature are résumés in mental shorthand of the sequences of our sense-impressions. Pearson's work is full of self-contradictions on the epistemological side. The logical and experimental side of science was more fully considered by Henri Poincaré. His knowledge of science was first-hand for he was one of the greatest mathematicians of his day. And yet his outlook is essentially Kantian. Crude

facts must be worked up before they become scientific facts. And what we finally discover are *persistent relations* or *laws* between phenomena.

Phenomenalism is attractive to thinkers because it invites a logical analysis of the data and conclusions of science and contains no appeal to anything more substantial than the elements given. Hence we find that an ingenious logician like Bertrand Russell is fascinated by its apparent logical economy and devotes his talents to a construction of reality in terms of sense-data, actual and possible. Objects are classes of *perspectives* of this sort. The ideal which Russell at times seems to hold in mind is a logically ordered solipsism.

Neo-Kantianism is a reaction against speculative or absolute idealism. It stresses the critical, or logical, aspect of Kant's thought. Because it agrees with the anti-realistic tradition which we have spent so much time in tracing it is frequently called critical idealism. The texture of critical idealism and its close connection with Kant's thesis of consciousness-in-general appear in the following quotation from Cassirer's *Substance and Function:* "If we determine the object, not as an absolute substance beyond all knowledge, but as the object shaped in progressing experience, we find that there is no 'epistemological gap' to be laboriously spanned by some authoritative decree of thought, by a 'transsubjective command.' For this object may be called 'transcendent' from the standpoint of a psychological individual; from the standpoint of logic and its supreme principles, nevertheless, it is to be characterized as purely immanent. It remains strictly within the sphere, which these principles determine and limit, especially the universal principles of mathematical and scientific knowledge. This simple thought alone constitutes the kernel of critical idealism."[1]

There can be no doubt that neo-Kantianism has done excellent work in the study of the logic of the sciences. But is there any necessity for this opposition between tested knowl-

[1] Cassirer, *Substance and Function*, p. 297. Open Court Publishing Co.

edge and the psychological individual? Is it not the individuals who do the thinking in a cooperative way by understanding one another and reaching tested conclusions? German thinkers have found it very difficult to keep logic in touch with the individual's thought, and have been afraid of what they call *psychologism*. We have tried to show how epistemology supplements ordinary scientific psychology by raising the question of the nature and reach of knowledge.

Pragmatism.—Pragmatism is the name of a movement in contemporary philosophy which seems to link truth with what is useful and verifiable in human experience. Because it is a tendency hard to define, its opponents often do it injustice while its advocates do it more than justice. Like all new movements, it has a negative, or critical, side and a positive side. In the space at our disposal, all we can try to do is to show its general drift, chief doctrines and obvious assumptions.

First, a word about its history. In 1878, Mr. Charles S. Peirce wrote an article for the *Popular Science Monthly* in which he proposed a test for ideas: "Consider what effects, which might conceivably have practical bearings, we conceive the object of our conception to have. Then our conception of these effects is the whole of our conception of the object." This article attracted little attention for nearly twenty years when it was at last referred to by William James and woven into his criticism of what he considered to be a disregard of concrete human life in both science and philosophy. As we have already pointed out, it was objective idealism of the absolutistic type to which James objected. James's gift as a writer and his standing as a suggestive thinker soon made the term pragmatism widely known both in America and in Europe. From an attitude, pragmatism became a fairly definite body of doctrine arranged around a theory of truth as its point of departure. Its most distinguished advocate in America to-day, now that James is dead, is Professor John

Dewey; in England, its chief advocate is Dr. F. C. S. Schiller.

The critical side of pragmatism is an attack upon what it variously calls absolutism and intellectualism. There can be no purely formal and logically internal criterion of truth that is adequate. There must also be practical, empirically applicable, experimental, non-logical criteria. We shall find that there was a healthy emphasis in this aspect of pragmatism. But there was at times vague thinking from the standpoint of modern realism. To do it justice we must take it in its period.

Pragmatism makes a healthy advance when it calls attention to situations in which human thinking takes place and refuses to ignore purposes. It stresses psychology rather than abstract logic and calls attention to thought as an empirical process aiming at the successful accomplishment of purposes. In this regard, it reflects the growth of biology, psychology and the social sciences and stands for what may be called *temporalism*. There is nothing in all this which is strictly epistemological, and the majority of realists would be quite willing to admit much of what pragmatism stands for. James and Dewey in America worked along the same line in an attack upon Bradley and Bosanquet. They identified themselves with the empirical tradition of Hume and Mill brought up to date in its biology, psychology and logic. The categories in terms of which they chiefly thought are biological and psychological categories. Dewey admittedly thinks in terms of evolution, especially social evolution.

But when we seek to trace the epistemology which crops to the surface now and then, we find that it is distinctly of the experiential type. Schiller suggests that our thought *makes* reality. It is not our thought of reality which changes but reality itself, for he seems not to admit that these are separable. Realty is plastic and thought modifies it. And so far as Schiller has recognized epistemology, he has inclined to the idealistic tradition that a transcendent object

is unthinkable. The object known is a part of experience. William James distinguished between pragmatism, as a method of interpretation of thought and truth, and a general theory of reality which he called *radical empiricism.* And when we come to examine his theory of knowledge, we find it stresses transitions within experience. An idea means a thing when it leads up to it and enables us to get in touch with it. His treatment is detailed and complex, and it is impossible to do justice to it in the present specialized survey. The point which seems to stand out is that he neglects knowledge of an object as we have analyzed it because he is an experientialist. Dewey puts the main stress upon the future. Ideas are instruments of adjustment and creative interpretation. It is the social, guiding function of ideas which now interests him, and he is even bitter in his attacks upon the futility of the traditional problems of philosophy. Dewey claims that his outlook is realistic, and I think that there is no doubt that it is. But it is a realism akin to that of common sense. It is a sort of denotative experiential empiricism very much like positivism.

The influence and suggestiveness of the pragmatists cannot be denied. They have done much good in stressing the nature and conditions of human thinking. It is knowing as an event which they have investigated. Thus they have demonstrated the close connection between psychology and logic. Nevertheless, it is to my mind doubtful whether they have much aided —except indirectly—the solution of the basic problem of epistemology which arose in the seventeenth and eighteenth centuries. In fact, it has seemed to me that they have been strangely perverse here. Perhaps the fact that most of them were brought up philosophically under the influence of the great experientialist, idealistic movement may account for this. And we must remember that the centre of gravity of their attack was absolute or objective idealism. Perhaps the fact that they were interested in biology and psychology rather than in physics and chemistry had something to do with

it. As we shall see later, pragmatists have concerned themselves little with cosmology.

Realism.—The axiom of realism has been stated as follows: "Knowledge unconditionally presupposes that the reality known exists independently of the knowledge of it, and that we know it as it exists in this independence." The opposition between idealism and realism is thus a sharp one. It must be admitted that objective idealists deny this, but that is because they shift their standpoint between an absolute knower and a human knower. The modern realist is always thinking of a human knower. He is suspicious of a consciousness-in-general and of its relevance for epistemology.

Epistemological realism is a very old doctrine, much older than strict idealism. The recent development of it—with which, alone, we shall be here concerned—began as a reaction against idealism. Idealism was ego-centric and stressed the self and its thoughts. In itself, this was not a bad thing, but for the historical reasons we have indicated, it went to an extreme. The reaction was certain to manifest itself. It is my opinion that this reaction over-reached itself in neo-realism and that critical realism is a more balanced outlook. Nevertheless, these last two movements have much in common.

There are two species of neo-realism, the one more characteristic of Great Britain, the other of the United States. We can speak of them both as *apprehensional realisms*. I mean by this that both hold that non-mental entities are literally given in what we may call the field of consciousness. We have already become acquainted with this outlook in our reference to S. Alexander in the ninth chapter. It may be called an analytic development of natural realism. The American movement was influenced by the English one but, as we shall see, swung in the direction of behaviorism and the denial of the traditional, empiricist conception of consciousness as a subjective realm connected with the organism.

The English movement is historically associated with the names of G. E. Moore, Bertrand Russell, Prichard, Laird and

S. Alexander; and, farther back, with Reid, Hamilton and others. It is a curious fact that representative realism was discarded as incapable of redemption.

For Alexander, primary knowledge consists of an act of awareness directed upon an object which is contemplated. This act, alone, is mental, the object of the act being non-mental. Thus all characters, such as colors, shapes, sizes, which we described as elements of the content of perception, are qualities and relations of things. We have here, he believes, an ultimate *compresence* which has analogies all through nature.

Using a term of R. B. Perry's we may call this position epistemological monism. This means that idea and object are existentially, or numerically, one. A real tulip and the idea of a tulip are for this position identical element for element. Our seeing the tulip is an event which is external to the tulip. We have here the doctrine of external relations applied to cognition. That we are aware of non-mental realities is a fact which, for these thinkers, we must simply accept.

But how is this position going to meet the objections which we regarded as sufficient to break down natural realism? That is its chief difficulty. It is hard to see how it can distinguish between appearance and reality and make allowance for perceptual perspective and error. The realistic faith is strong in these thinkers; they are convinced—and I think rightly—that we in some sense perceive and think objects existent in their own right and not mental states. Suffice it to say that if I were persuaded, as they are, that the choice lay between some form of apprehensional realism and subjective idealism, I, also, would seek to carry through such a position and might even ride rough-shod over difficulties.

Let us point out in addition that, if cognition implies the existential givenness of the object to a simple, mental act of awareness—the English position—or the givenness of the object in the field of consciousness—the American position—certain startling results follow. Thus in knowledge of a past

event the past event itself must be compresent with the present act. My mind must be capable of leaping in a truly remarkable fashion across space and time. Thus when I think of Napoleon that person, himself, must be given. When I perceive the moon, the moon itself must be compresent with my act of awareness or be a member of that collection of objects I call my consciousness. Cognition would seem to be a miraculous power which enables the knower to penetrate the vasty deep and to explore the past. And in a sense this is true. But may we not conceive knowledge in such a way as to remove the literalness of this mental journeying? But before we proceed any farther, let us examine the American position.

The American group of neo-realists allied themselves with biology and behavioristic psychology and were, from the first, skeptical of this act of awareness of a mental sort of which the English neo-realists spoke. They were influenced in this by Hume's analysis of the self, by Mach's attempt to change sensationalism into realism with neutral elements, and by William James's later teaching called radical empiricism which worked along the same lines as Mach's attempt. The logical doctrine of external relations, that is, relations which do not modify their terms, also influenced them. It cannot be denied that the whole movement was a very daring one. It broke completely with the traditional conception of consciousness.

It is best to give quotations in order to avoid the dangers of misinterpretation. "It is important, therefore," writes Perry, "in expounding the general realistic theory of knowledge, to distinguish two component theories. The first I shall call the theory of 'immanence!' This is the same theory as that which I have in another connection termed 'epistemological monism.' It means that when a given thing, *a*, is known, *a* itself enters into a relation which constitutes it the idea, or content of a mind. The second I shall call the theory of 'independence,' and it means that although *a* may thus enter into mind, and assume the status of content, it is not dependent on

this status for its being, or nature."[1] Notice the word enter. This means that the independent existent itself enters consciousness. A man's consciousness is an aggregate of entities selected by the reaction of his organism.

The position which we have been developing in this book is variously called non-apprehensional realism, epistemological dualism, transcendence, and critical realism. The first few expressions are descriptions which differentiate critical realism from neo-realism.

The difference between it and neo-realism lies in this that it holds that the human organism can select and mean physical objects *by means of consciousness* which can never literally enter consciousness but only *appear* there in terms of a content. The object is transcendent but the content is regarded as revealing the characteristics of the object. It is through what may be called the cognitional identity of characters in consciousness and the characteristics of the object that knowledge is possible. In short, we think objects outside our consciousness in terms of discriminated characters in our consciousness, a process beginning with perception.

Critical realism represents the clear recognition of the difference between the cognitional presence of an object and the existential presence of an object. It is also the realization that knowledge is a unique kind of event involving the logical identity of the characteristics of an object and the content held before the mind and is not the asserted *likeness* of two kinds of entities the one psychical and the other physical. It was Berkeley who saw the inadequacy of this latter view of knowledge built upon Cartesian dualism. The question of psychical existence is not directly raised in knowledge. Just what psychical existence is and how it is related to the organism we shall examine in our cosmology.

One more point remains. Critical realism maintains that objects are *more than* their characteristics and believes in an existential stuff which does not enter consciousness. The neo-

[1] Perry, *Present Philosophical Tendencies*, p. 308.

realist identifies objects with logical contents and does not believe in an existential stuff. The world is transparent or given for the neo-realist in a way that it is not for the critical realist. This difference will likewise be influential in our ontology.

In conclusion, let me remark that, in spite of superficial appearances to the contrary, there has been a gradual and remarkable growth in epistemology. These distinctions were not easy for the human mind. It is, I think, not difficult to see that the range and character of the human mind was slowly discovered. Critical realism owes much to English empiricism, Kantianism, pragmatism and neo-realism. It is my persuasion that it includes, and does justice to, the valid elements of these movements.

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CHAPTER XII

TRUTH AND ERROR

Knowledge and Truth.—Having carefully studied the typical epistemological positions of the present, we are now in a position to discuss a question which has been one of perennial interest. The problem of truth logically follows the general formulation of the problem of the nature of knowledge. Without a theory of knowledge it would be hardly possible to have a theory of truth.

That there is a very intimate connection between our notions of truth and of knowledge is apparent in the fact that the expression, "true knowledge," is felt to be a tautology. It is like speaking of a round circle. We should not be surprised, therefore, to discover that the various views of knowledge which we have been examining have their corresponding theories of truth.

We must get clearly before our minds the exact type of experience which is connected with the question of truth. As long ago as Aristotle's time, it was seen that truth and error are relative to judgment. Presentations of all sorts are neither true nor false; they are simply experiences or contents. Thus I can have a feeling, be aware of a pain, allow a plan to engross my consciousness, entertain an idea. But wherever, and to the extent that, there are believed interpretations of objects the possibility of truth and error enters. Assertions, or knowledge-claims, involve a risk of error for they are interpretations of objects. "In the actual felt toothache knowing and being are not only inseparable—they are indistinguishable. If, however, I think of my toothache as part of an independent order of reality, my knowledge of it may be true or false. I am then thinking of it as the effect

of an exposed nerve, or of an abscess or of an inflammation—as something, that is to say, that is conditioned independently of my consciousness and that will cease to exist when the conditions are altered."[1]

It has been customary to speak of non-assertive experience as feeling. All the elements of the field of consciousness that are merely experienced as present, such as emotions and ideas, are neither true nor false. They simply *are* after their own kind. For our present purpose, there is no need to be oversubtle and to study border-line cases. We can be satisfied with the distinction between explicit assertions and feeling. And let us admit that we are more often willing and dreaming and experiencing than explicitly judging. Pragmatism has, in fact, made much of this difference between immediate experience and reflective experienc.

The question of truth has, then, to do with the type of experience which we speak of as belief, assertion, interpretation, judgment. In all such experiences, there is a sense of contrast. We are all more or less aware that what we are judging about has a *nature* independent of our judging. We seem to assert some sort of identity between the content of our judgment and the characteristics of the object. We are assured that the content reveals the object. The act of judging takes place at a certain time and in a certain knower, but we think of the content as not concerned with this fact but with its revelation of the object of thought.

The Distinction between the Meaning and the Criteria of Truth.—The problem as to the exact nature of truth came to the front with the controversy between pragmatists and objective idealists. This controversy raged in full vigor for a decade or so. The objective idealists identified truth with reality and laid stress upon purely logical criteria, the chief one being coherence. The pragmatists rejoined by stressing human utility and even satisfaction. This debate turned around general philosophical differences as much as anything,

[1] Carr, *The Problem of Truth*, p. 18.

for the pragmatists believed in the basic importance and reality of time while the idealists held that time is essentially appearance. These differences will be taken up later in some detail.

It cannot be denied that the pragmatists put their chief stress upon the *verification* of ideas which claimed to be true. They saw truth as a human achievement. This way of approach led them to regard verification as an essential element in the very meaning of truth. They were aided in this identification by the tendency to regard ideas as plans of action or as instruments for adjustment. This tendency went with their interest in human achievement and their emphasis upon living as a process. There can be little doubt, I believe, that, for a while at least, the pragmatists did not do justice to the desire to know the world apart from the use such knowledge could have or, to put the same thing in another way, they did not see that knowledge was different from action even though it aided action. Let us admit the value of their revolution while calling attention to the extreme to which it went. They were just oversimplifying human life by thinking of it as a ceaseless movement with no time for, or interest in, contemplation.

This first stage of the controversy was followed by the growth of realism. It was not long before the distinction was made and enforced between the criteria of truth and the meaning of truth. By truth we mean a definite thing, but we must have tests before we can be certain that an idea is true.

On the whole, both objective idealists and pragmatists rejected the belief in an independent object with which an idea must somehow agree if it is to be true. Realism tended to bring this principle in and make agreement with an object the essential element in the meaning of truth. We shall see that critical realism makes a sharp distinction between the criteria used to determine *whether* an idea is true and the precise meaning of the statement that an idea *is* true.

To summarize, objective idealists thought in terms of logical systems of a self-sustaining sort; pragmatists rebelled and treated ideas as instruments for human adjustment and achievement; and realists moved in the direction of the distinction between idea and object and the stress upon the difference between the meaning of truth and the criteria of truth. It is undeniable, then, that theories of truth reflected systems of philosophy.

The Coherence Theory of Truth.—It will be remembered that for objective idealism experience is the ultimate term. On the whole, it is characterized by what is called a *monistic outlook*. The whole includes and swallows up the parts. Everything finite is more or less illusory and unreal, for its meaning can be seen only in its total relations to all else. Thus reality is regarded as a highly organized whole. To separate anything is to see it out of its relations. Let us remember that space and time are looked upon as not really valid and as full of contradictions. Instead of these categories, so characteristic of physical realism, we find such terms as "organic" and "individual." The whole is an all-inclusive individual.

But, it may be said, this is a theory of reality and not of truth. To which it must be replied that the idealist refuses to make such a distinction. Truth in the strict sense is reality; it is a coherent system of meanings. Partial truth is something incomplete and more or less incoherent. Let us remember that the idealist does not admit a transcendent object existentially distinct from our thought of it. It follows that that which characterizes truth must be something internal to experience. And, from the logical standpoint, what is more conspicuous than system and coherence?

The objective idealist has before him, then, the standard of a timeless and complete system of meanings. Everything short of this is a mixture of truth and error. Unfortunately, it is in this lower region that we humans dwell. Our truth

is more or less error. But, of course, there are degrees even here.

The coherence theory of truth rests upon two principles: (1) the epistemological one above mentioned, and (2) a logical one called "internal relations." This logical doctrine is interesting but it cannot be said to be generally accepted. It is to the effect that no proposition taken by itself is completely true. Thus the proposition that Charles I was beheaded is not completely true. Truth is an affair of systems and demands all the knowledge relevant to an event, and this involves everything else.

But surely we are not claiming in a proposition, such as the one about Charles I, to state all we know about this person. We are merely stating one fact about him. Yet herein lies the difference. For the idealist no fact is complete by itself. Hence, every fact leads to every other fact, and so implies the whole universe. Personally, I have never been able to see this. As a realist, I would make a sharp distinction between the relations of objects and the logical relations of my propositions. Thus the relations of objects seem to me largely spatial, temporal and causal, while the relations between my propositions are those of indifference, identity and contradiction. For instance, the two propositions, "Charles I was beheaded" and "Washington was the leader of the American troops" seem to me to have no logical relations. They do not even have reference to the same subject. Nevertheless, I can quite understand how the idealist is led to his position. He is thinking of the growth of human experience and of how one proposition *supplements* another in throwing light upon complex subjects of discourse; and he takes this supplementation to be a *modification.*

This outlook has enthusiastic advocates and has been very inflential. It therefore deserves careful consideration.

The Verification, or Pragmatist, Theory of Truth.—We have already pointed out that the pragmatist view of truth expressed a rebellion against objective idealism and the co-

herence theory of truth. The stress is now upon time and upon human achievement and needs. William James, John Dewey and F. C. S. Schiller, the pragmatists, had Bradley, Bosanquet and Royce for opponents. As we have noted, there was here a general opposition against what was called variously absolutism and intellectualism. We are already far enough away from this controversy to have perspective.

The pragmatist laid stress upon the biological and psychological conditions of judgments and the purpose of them. As a consequence, he made much of human situations and the time-factor. But he did not put sufficient stress upon the content and objective reference of judgments. There was a tendency to think of ideas as plans of action to the exclusion of objective cognitive claims.

The main thesis of the pragmatist was that there can be no adequate formal criteria of truth. There must be practical, empirically applicable, external tests. The next point to note is that, for the pragmatist, truth is an adjective of ideas. Ideas are ways of thinking. As such, they arise in human minds and have a definite *function* to perform. What is this function? There's the rub. Is this function primarily that of guidance or of cognition? Now we would all be willing to admit that nearly all ideas can have practical value: but is their practical value identical with their cognitive value or dependent upon it? In other words, do ideas work because they are true? Or are they true because they work? And, to complicate matters, are there not different kinds of ideas, some plans of actions and others judgments?

It cannot be said that pragmatists were always crystal clear in regard to these matters. I am inclined to hold, for example, that Dewey quibbles somewhat in regard to ideas and tries to make all of them have a future reference like plans of action. And the reason for this is not hard to find. The pragmatists refuse to think of truth as involving a

present relation of identity with an external and independent object. Here is where their experientialism or half-idealism enters. The truth of an idea must, therefore, lie in its future.

We are now ready to state the pragmatist's theory of a true idea. It is one that works successfully, one that performs its function. "True ideas," wrote James, "are those that we can assimilate, validate, corroborate and verify. False ideas are those we cannot. That is the practical difference it makes to us to have true ideas; *that, therefore, is the meaning of truth,* for it is all that truth is known as."

It is obvious that the critical realist cannot accept this definition of truth which is to him a confusion of truth and verification. Yet he can see that it is a very natural position for the pragmatist.

When we come to examine the methods of verification which give a truth-meaning to ideas, we find that the pragmatists have several and that it is not always certain whether they give equal weight to all of them. Much of the early objection to pragmatism was due to this ambiguity. I think that it is only fair to say that, as time has gone on, the leading pragmatists have inclined more and more to stress the more logical tests of agreement with facts and coherence with other tested judgments. And yet they feel that the larger background of successful working in life is important. I presume that is because they think of ideas as plans of action. Let me quote from Dewey in this connection: "If ideas, meanings, conceptions, notions, theories, systems are instrumental to an active reorganization of the given environment, to a removal of some specific trouble and perplexity, then the test of their validity and value lies in accomplishing this work. If they succeed in their office, they are reliable, sound, valid, good, true. If they fail to clear up confusion, to eliminate defects, . . . they are false. . . . That which guides us truly is true—demonstrated capacity for such guidance is precisely what is meant by truth. The adverb 'truly' is more

fundamental than either the adjective, true, or the noun, truth."[1]

Can we not sympathize with this emphasis upon the establishment of ideas as worthy of our confidence and yet hold that the disregard of the view that cognitive ideas claim to be revelatory of their objects is quite unjustified? Professor Dewey opposes what he calls the spectator-view of knowledge to an active, experimental view. And this opposition seems to him to express a profound advance. But may not a spectator be forced to do much work before he can take a survey of a country? The mountain climber earns his delightful vista. In short, I cannot see the justification for this opposition which bulks so large in the pragmatist's eyes. Is it not a hold-over from the attack upon absolutism?

In this connection, let us consider the actual methods of verification to which human beings make appeal. These are surely of significance apart from any system of philosophy. We may name the chief ones as follows: verification by agreement with facts, often of a directly perceptual status, consistency, operation and sentiment.

Verification of a proposition by its agreement with simple propositions, very near perception, is the method which inductive science uses. An idea always has, as a part of it, a reference to a particular field of objects and events. Thus, to use a simple instance, my idea of the surface of the moon must agree with what astronomers can observe in regard to that surface. The basis of this demand is the belief that both perception and theory deal with the same object.

Verification by consistency is the same as verification by coherence. A new idea must fit in with other ideas on the same subject. Thus my idea of the surface of the moon should not conflict with general physical principles.

These two methods of verification are the ones most appealed to in science and can be spoken of as the logical

[1] Dewey, *Reconstruction in Philosophy*, p. 156. This book is the best resumé of American Pragmatism.

criteria of truth. All schools of thought admit the value of these criteria.

We come now to something more characterstic of pragmatism.

Verification by operation is the putting an idea to a practical test by making it the basis of an action. But this method either concerns plans of conduct which are obviously based upon mere probability or else it aims at the securing of further perceptual data and leads back to the first criterion. There has been much equivocation on this point. An idea can suggest an experiment for its own verification, but surely, it is the data, thus secured, which are used to test the original idea. On the other hand, a plan of action is based on cognitional ideas; but it, itself, is a purpose rather than a cognitional idea. And a purpose may be intelligent but can scarcely, as such, be called true.

Verification by sentiment is the testing of an idea by the personal or social satisfaction the idea gives. But there are different causes of pleasure. We may take pleasure in an idea because we believe it to be true, or we may take pleasure in it because it fits in with our prepossessions and desires. Are certain dogmas true because their promises please us? The individual soon learns that pleasant ideas must be guarded against or they will lead to disaster. And the human race has been slowly learning in the hard school of experience to relinquish first feelings as tests of truth. To the extent that extreme pragmatism first suggested the revival of such a tendency to hold that true which pleases us in the thought of it, it is to be condemned. Though the leading pragmatists did not countenance such a view, there was about their view of truth a certain vagueness which encouraged lesser men to think of sentiment as a test.

It is clear that pragmatism stressed the experimental attitude and looked upon truth as a human achievement. Thinking is an activity, and ideas are bound up with the whole process of thinking including all sorts of organic ef-

forts. Nevertheless, it seems to me that the data, thus secured, must be sifted and interpreted before the bar of reflective thought and that, when this is done, the criteria are logical in character.

Let us now summarize this necessarily brief survey of pragmatism and its theory of truth. In the first place, we pointed out that pragmatism was a revolt against objective idealism under the influence of biology, psychology and the social sciences. As a general philosophy, it stressed the significance of time and change. Since it was idealistic enough to reject the realistic notion of an external object which our ideas claim to know, it followed the suggestion of biology to an extreme and held that all ideas are primarily plans of action. I think this was a mistake. But back of this bias of pragmatism lies its theory of knowledge. Its exploration of the criteria of knowledge and the bio-psychological foundation of thought has done much good. Nevertheless, it has had such an extreme interest in *thinking as a process* that it has neglected the *structure of thought* as a content. In other words, it has been weak in structural logic. It is the old story of one step at a time.

Realism and the Identity Theory of Truth.—As a result of the above discussions of objective idealism and pragmatism, certain points with respect to truth should begin to stand out. In the first place, critical realism and neo-realism both reject the organic view of thought. Understood propositions have only logical relations to one another such as identity, indifference and contradiction. And propositions which refer to different objects are neutral to each other. Thus factual propositions about an object supplement one another but do not modify one another. They may modify our total idea of an object, which, however, is a complex, by addition or by leading us to reject some other proposition. We have here a technical matter into which an introductory book cannot go any great distance. In the second place, critical realism and neo-realism emphasize the distinction

between the meaning of truth and the verification of truth. I am inclined to think that this distinction has more significance for critical realism than for neo-realism even. We saw that pragmatism tended to swallow up meaning in verification.

Let us first of all examine the meaning of truth for critical realism or epistemological dualism. For this position we mean and know objects in terms of contents. An act of knowing is act of judging, and it makes a claim that the object has the characteristics which we think it has, that it *is* as we think it. We have here an ultimate claim whose genesis and development we can follow from perception upward.

We must be very precise here. For critical realism, the content of judgment is existentially bound up with the act of judgment of a knower but *in judging* we are not concerned with this existential question but with the logical content which we consciously grasp and which we assert to be revelatory of, and thus cognitionally identical with, the characteristics of the object. In brief, in cognition we are not concerned with the stuff of the object but with its characteristics. And it is the logical content of our thought which we take as revealing these characteristics.

The ultimate epistemological question is, accordingly, the nature of this appearance or cognitional revelation of the object. What does it involve? It can only be a peculiar kind of identity which, for want of better names, we can call either logical or cognitional identity. The basic point is, that we must not think of this identity as of an existential, or even semi-existential, kind. There is not something which flits between the object and the mind. Some of those thinkers who hold much the same position as I do speak of an identity of essence in knowledge. In knowledge, they assert, the essence held before the mind and asserted of the object is identical with the essence embodied in the object. If this is but another way of saying what I have said, I have no objection to it; but it may easily be taken to mean the belief

in entities of a peculiar sort, called essences or universals, a tradition which goes back to Plato.

To critical realism, as I understand it, therefore, there are in knowledge of things two existences: the human knower and the object known. The object known has its characteristics in the sense that it has a structure and ways of behaving. Ultimately through perception of it or of something similar to it, the knower has achieved a logical content in terms of which he thinks the object. How he has achieved it we have more than once indicated. When we come, in our cosmology, to examine in more detail the distinction between primary and secondary qualities, we shall see that the *order* of the world is reproducible and that the whole perceptual mechanism of the organism is adapted to such a reproduction. In the medium of consciousness there arises a sense of order, or pattern, which undoubtedly has a motor backing. A careful study of space-perception as developed in a good psychology will bring out what I mean. Thus somewhat as an artist reproduces the pattern of the scene before him does the organism reproduce the pattern of its objects and the empirical self become aware of this pattern in the field of consciousness and use it in the act of cognition.

Once this situation is understood, we can speak of the pattern of the world as being reproduced in the mind. Shall we then say that the pattern is identically the same or shall we say that the patterns correspond? It depends upon what we are thinking of. If we have the different locations of the pattern in mind we are likely to speak of corresponding patterns. We do this for copies of the same scene or the same piece of statuary. But if we have in mind just the logical aspect we are more apt to say identical than correspondent. When comparing contents before our own minds, we speak of logical identity. This color is the same shade as that; this shape is the same as that. When we are thinking of existences, we speak of similarity. This thing is *like* that. But in cognition we are in a peculiar situation. We

are thinking objects in terms of contents and not comparing two contents in our own minds. That is the situation, and it seems to me that we can do nothing but recognize its ultimacy.

In the past, the chief objection to the correspondence theory was the impossibility of comparing idea—regarded as a psychical existent—and object to see directly whether they did correspond. Because Locke bungled the problem by approaching it from the causal side, he spoke of similarity. But similarity involves two compared things. And we can get at only one. The point is that Locke missed the real claim of cognition. We cannot get cognitively nearer to things than our cognition of them. To compare the thing with our thought of it is just to take our thought's content over again. Underlying this mistake of the older representative realism was the belief that we first know ideas as entities and then know things because of their similarity to them.

What, then, is the precise meaning of truth? It is the reaffirmation of a knowledge-claim after doubt. It is the assertion that the object is revealed in the idea-content. And error is the denial of a knowledge-claim. To say that an idea is false is to say that the content does not reveal the object, does not give the actual characteristics of the object. The meaning of truth and the meaning of knowledge go together.

But how can a knowledge-claim be verified and shown to be true on the basis of critical realism? Obviously, we are not going to try to do the impossible thing that representative perception was challenged to do, to compare idea-content and object. Comparison would presuppose a prior knowledge of both. In epistemology we cannot get back of knowledge. No; we must recognize our actual situation. Knowledge in detail is a complex which must justify itself by the way its parts fit together to reveal an intelligible and massive world. And here we in a measure lay stress upon the same test that objective idealists have called attention to—and yet in a different setting. Fitting together is not the same as organic

interdependence; the logical theory is somewhat different. And, again, we admit a world whose structure is revealed in this tremendous mass of coherent knowledge which the various sciences have achieved. Since the sources of knowledge are so many acts of perception of so many people, this union of tested propositions into the view of a massive world is the best test of the reality of human knowledge. It reenforces and confirms the cognitive value of perceptual data upon which all advanced knowledge rests and upon which it builds. Understood in this sense, coherence of results, the detailed and continuous picture of the world presented, is the best criterion of knowledge and truth. The human mind begins with a faith in the revelatory power of perception and, though it learns to correct it by noting conditions, refuses to regard as arbitrary and subjective that which apparently gives insight into a gigantic domain independent of our human thought. And I can see no argument for skepticism strong enough to cast doubt upon this belief. What skepticism accomplishes is the casting of doubt upon false and inadequate views of knowledge, such as natural realism.

Working within this basic criterion of knowledge and truth we can note two others which we may call respectively *the power of prediction* and *guidance-value*. By means of claimed knowledge we can predict the course of external events as in the well-known case of eclipses of heavenly bodies. All through science there reigns this power of relative prediction. And it seems to me that such a power implies insight into the course of things. Without knowledge, prediction would be a work of chance more likely to fail than to succeed. Finally, the guidance which perceptual knowledge gives to our organism is to me a sign that the relations and behavior of things are revealed. More complicated adjustments require the prevision and range of scientific knowledge; yet the situation seems to me essentially the same.

My conclusion is, that there are definite tests of the reality of knowledge even though, by the very nature of the case, we

cannot have a more intimate awareness of things than knowledge itself.

It seems inadmissible to leave the question of truth without some reference to neo-realism.

There is a large consensus of opinion that neo-realism finds it hard to offer a theory of error. *If things are just given in consciousness, how can there be error?* Neo-realists have differed widely on this question, and they have in this, as in other points, exercised great ingenuity. Need I indicate again how much critical realism and neo-realism have in common with respect to logic and general realistic outlook? Nevertheless, they differ profoundly in regard to the situation in knowledge. For the critical realist, knowledge does not involve the existential presence of the object; for the neo-realist, it does. Hence the very ingenuity of the neo-realist may make his position all the more perverse. Bit by bit, it is leading the neo-realist to behaviorism of the extreme sort that denies consciousness. It has led Professor Perry there, and I have the personal statement of S. Alexander that he suspects that it will lead him there. Let us note Perry's theory as given in a paper before the French Philosophical Society.

We are able to prepare a reaction even in the absence of the thing which it would require if the reaction were to be completely carried out. When this prepared reaction is adopted without reserve, that is, when the whole organism engages in it, there arrives that which we call belief. A belief is a confident awaiting of something. To await one thing rather than another is to arouse the reaction proper to it. If this complementary thing appears to complete the reaction, the belief is demonstrated to be true. If not, the belief is false.

It should be noted that this behavioristic view leaves out of consideration knowledge-claims in terms of ideas to stress the total organic setting. The critical realist feels sympathy with this stress upon the organic basis of belief—and I think

that the pragmatist does also. But is justice done to the actual content of experience at the moment of belief by this behaviorism? I cannot feel that it is. More light will be cast upon this topic when we come to consider the mind-body problem.

Concluding Remarks.—It should be clear by now that critical realism represents a decided break with the typical outlook of the nineteenth century. Yet it owes much to the analyses of thought made during that time.

In the first place, it breaks completely with the assumptions and beliefs of idealism and experientialism. It holds that we can know objects which are outside our consciousness in terms of contents inside our consciousness. Hence it regards knowledge as an interpretation of an object rather than its literal presence. In the second place, it refuses to accept as adequate the compromise, which neo-realism suggested, that an idea is existentially identical with the object. Thus it has daringly proclaimed the heresy that we can know objects which transcend our consciousness existentially. And it has analyzed out the mechanism of such cognitive transcendence. Cognitive transcendence is not existential transcendence.

Need I point out that this position is not in the least agnostic? The range of knowledge is as wide as the world of objects. But—and here is an important point—we now see more clearly the nature and intrinsic limits of knowledge. Knowledge is an interpretation of objects in terms of specific contents revealing structure, relations, composition, behavior. These we shall call the categories. Under these all the details come as instances. But when I say that an object moves I do not say that I *thought* that this object moves, itself moves. When I say that a thing is active I do not mean that my meaning, or logical content, is itself active. What exists is not identical with knowledge; it is known. This view breaks completely with the tradition that existence is of the nature of logical universals or contents, a view which neo-realism and Hegelian idealism both tended to accept.

We shall quickly see that this difference has ontological implications. It will lead us more in the direction of a critical naturalism than has been usual in academic philosophy. And it will bring us more into touch with the actual movement and problems of science than has been characteristic of idealism.

Without this epistemological preparation I do think that ontology would have been meaningless. But we are now ready to explore the world.

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PART TWO

GENERAL ONTOLOGY AND COSMOLOGY

CHAPTER XIII

PROBLEMS AND METHODS IN ONTOLOGY AND COSMOLOGY

From Epistemology to Ontology.—On the whole, the problems we have thus far studied and the distinctions we have made have been dominantly epistemological. There were two reasons for this emphasis. In the first place, epistemological difficulties have undeniably given tone and perspective to modern philosophy. Without an appreciation of them, it is, in fact, scarcely comprehensible. In the second place, it was needful that the student become acquainted with the basic point of departure for a critical philosophy, namely, the working of the human mind in the face of the stimuli and suggestions which come to it. He must be able to stand back and take stock of *knowing* as an activity and an adventure. It is this persistent analysis of the very nature and foundation of human knowledge which in a measure differentiates philosophy and the philosophical attitude.

But we are now ready to discuss *what is known* as well as knowing. And the two enquiries are supplementary. What kind of a world does ours turn out to be? What views of the general pattern, and even stuff, of the universe have thinkers entertained? What light does our own epistemology and the advance of science throw upon these traditional views? We shall, I am sure, find this new investigation more concrete, and perhaps even more interesting, than the problems which have thus far engaged most of our attention. But we shall find, I am convinced, that what we have already done was a necessary preparation.

It will be remembered that in the second chapter we gave

a brief outline of the main philosophical disciplines or sciences. We are now about to plunge into the age-old problems and distinctions of metaphysics, the science of reality. Metaphysics falls naturally into two main divisions: *general ontology* and *cosmology*. These two divisions are not completely separable any more than they are separable from epistemology. And we shall see that cosmology has thrown much light back upon traditional ontology.

Under general ontology, then, we shall discuss such questions as the following: Is reality spiritual, or is it material? Or are there, perhaps, two distinct kinds of reality which somehow exist cooperatively to make one universe? Or is there another possibility which the theory of evolution and a critical epistemology open up? These general questions are typical of ontology and obviously concern themselves with the problem of the *stuff* of the world. It will be our endeavor to show that epistemology and the results of the special sciences together have direct bearing upon this problem.

It is within the domain of ontology that much of the speculation that has tended to give philosophy a bad name took place. The checking of general ontology by cosmology has of late years had a healthy effect. The fault with much of this older speculation was that it began with the belief in some superlative reality which could be glimpsed in a formal way by *a priori* dialectic. The ideal held before thought was deduction. While I cannot for a moment admit the truth of all the harsh things that have been said about ontology of this sort, I am quite ready to grant that it was too formal and equivocally deductive. Beliefs of all sorts crept in. The spirit of contemporary philosophy is much more analytic and inductive.

Another set of questions which have usually been discussed in connection with ontology concerns itself with the contrast between singularism, or, as it is often called, monism, and pluralism. Historically, the problem which is here under

consideration is that of "the one and the many." One tradition in philosophy has laid stress upon the whole as against its parts. Along with this emphasis has gone the belief in centralization and unified authority. Opposed to this tradition is the acceptance of de-centralization and the belief in a looser union in the universe.

These opposed traditions are complex and have absorbed different elements in logic, ethics, and epistemology. The student must feel his way into an appreciation of these currents and traditions. On the whole, singularism has allied itself with absolutism and transcendentalism. It has stood for what is analogous to monarchism in politics; only analogous, however, because any earthly monarch is only one among many other individuals. This tradition is skeptical of any free play among the parts. It senses control and unity. Pluralism, on the other hand, represents a rebellion against this tradition of centralization and an internally-compelling unity. It stands for a relative autonomy of the parts.

During the nineteenth century absolutism was definitely championed by the dominant group of objective idealists. The individual was regarded as an adjective of the whole which somehow transcended and included it. Bradley and Bosanquet are excellent representatives of this tradition. And, as we have already pointed out, pragmatism was in part a revolt against this outlook. It asserted the relative independence of the individual. For it, the universe was split up into various centres of activity loosely connected.

But we must not forget that physical science also had its traditions which were those of a dead-level mechanism. When all is said, there was much in common between the absolutism of idealism and the absolutism of science. For neither did the individual count for much. Perhaps he does not anyway. But it is at least a question which we must investigate.

To illustrate the tangle of traditions in speculative ontology, we might point out that idealistic absolutism was dominated by the categories of personality. There was in it

an obvious kinship with theology. Scientific or mechanical absolutism, on the other hand, was of a naturalistic type and stressed space, time and causality.

We shall endeavor to show that philosophy has been moving from one stage to another with respect to these questions. Pragmatism attacked idealistic absolutism but had relatively little to say about scientific naturalism. It was, however, by tradition opposed to it and favorable to personality. With the growth of realism and the fuller grasp of the implications of modern science, cosmology has come to its own again. What is the place and destiny of human personality in the kind of world science is revealing? Is there such a thing as freedom for the individual? Are there levels of capacity and initiative among things? Such questions as these are again pushing to the front, but in a more naturalistic context than was usual a few decades ago.

Questions about the ultimate stuff of the universe combined with the problem as to whether it is loosely or closely knit to furnish sufficient subject-matter for speculation. Technical differences in logic and epistemology played their part in this complex, and it is highly probable that temperament and religious traditions affected the position adopted. We must feel our way into these outlooks and learn to appraise them. This will take time, but the time will be well spent.

Quite naturally, the interest of mankind has always been greater in questions of the kind just indicated than in those of epistemology. The latter is a technical subject with only indirect connection with the great problems of life and destiny. Yet it had its implications. Thus the controversy between idealism and realism gained much of its vigor from its bearing upon ontological problems. A realist is almost certain to have a different attitude toward science than the idealist.

We have not desired to linger upon epistemology longer than necessary. Having achieved some clear ideas on the subject, we wish now to come to an understanding in regard

to the characteristics and structure of the cosmos, the properties of physical things, the origin and nature of life, the relation between mind and body, the possibility and meaning of freedom, etc.

The Presence of Sharp Contrasts.—Both science and philosophy have been replete with sharp contrasts such as living and dead matter, the physical and the psychical, the material and the immaterial, mechanism and teleology, freedom and necessity, law and chance. These abrupt antitheses have puzzled reflective thought, for they have been the expression of apparently unavoidable discontinuities. The world has seemed to break up into parts and processes which could not be brought together. If living matter is so different from dead matter, how do they happen to be so closely connected? Does not the one seem to be transformable into the other? And if life is something new, appearing only at a certain stage in the history of the earth, whence did it come? Is creation a solution? It is not difficult to see that much the same set of questions must be raised for the human mind also. Can science deal with minds and fit them into the physical processes which it has mainly studied? Mind seems to be selective and purposive, while physical processes have usually been regarded as mechanical and blind. That there is need for systematic thinking is obvious.

At one time, such problems did not greatly trouble the human mind. I suppose that the majority still ignore them or have traditional solutions for them.

This new orientation of science has been brought about by the growth of the biological and the social sciences and by the extension of evolutionary ideas into the inorganic sciences as a consequence of the new discoveries in those fields. It is this richness of the content of science which bids fair to burst the old bottles of rigid mechanicalism and to force a development of a more adequate cosmology. The situation affords a beautiful example of the naturalness and inevitableness of philosophical questions. Philosophy is not something superim-

posed upon science so much as something which science culminates in.

While this revolutionary change was occurring in the domain of the special sciences, an analogous change was taking place in philosophy. Here, also, the time-spirit was operating in the way of the advance of man's knowledge of himself and of the world at large. The result was the rise of pragmatism, realism and naturalism and the decline of the traditional, formal ontologies. It is not too much to say that the growth of realism and of naturalism made just that difference in philosophy which fitted it to cooperate sympathetically with science in the necessary work of fundamental reconstruction.

And yet for ages man has sensed the essential problems. Birth and death forced them upon his attention. The tragedy of war, the succession of the seasons, madness, the apparent destiny of individuals, all these gaunt traits of man and his world made certain implications stand out. Struggling with these implications was the dream of a kindlier spirit running through all things, a providence. So speculation is a basic expression of human life and only the prosaic can, or wish to, escape it. What matters is that to-day we have a wealth of knowledge and analytic power which gives hope of deeper penetration into the nature of things.

A Word about Method.—Incidentally, we have been discussing the method of philosophy. We have pointed out that very often philosophy was dominated by the idea of deduction. It was supposed that the human mind could by dint of intense thought discover some pregnant principle from which reason could deduce the main traits of reality. Philosophy was regarded as a search for a first principle which would illuminate and explain the confused detail of appearances.

This tradition was rationalistic in a vicious sense. It postulated something of the nature of an intuition in the first place in which first principles would be revealed.

But such systems found it impossible to make connection with the detail of human experience in an interpretative way.

The method which philosophy is coming frankly to adopt in ontology and cosmology may be called an *analytic survey of the world as known* to determine its most general features or structure. I would not speak of this survey as dominantly either inductive or deductive. The inductive-deductive work of the special sciences must precede, and what the philosopher seeks to do is to analyze closely the broad outlines and relations revealed in the sciences. He analyzes with the aim of synthesis always before him. The world contains a broad variety of domains and he must discover the characteristics of these domains and see how they yet fit together into one universe in which man's life runs its course.

Our world is a spatio-temporal world. What, then, are space and time? Our world is a material world. What, then, is matter? Our world contains living things. What, then, is life? In short, the method of philosophy is an analytic-synthetic reflection upon the world as it is spread out before a mind full of the knowledge gained by the sciences. It aims to be a penetrative survey of reality as known. It does not so much have a source of knowledge all its own—as at times has been supposed—as a duty to bring human knowledge to its stage of clarification and synoptic synthesis. With our epistemology behind us, all this can be more clearly grasped. We shall seek to press on to a solution of basic problems by means of an analytic-synthetic survey which correlates and pieces together the world as science spreads it out before the mind's eye. What are the characteristics of our world? And what variety and play of parts does it admit?

Perhaps there is no better way of introduction to the essential aim of general ontology than to examine the traditional *monisms of substance* which have disputed the field for so many centuries. What is spiritualism? What can be said for and against it? What is materialism? What can be said

for and against it as it has been formulated in the past? It is to this task that we shall now proceed.

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CHAPTER XIV

MATERIALISM AND SPIRITUALISM

Traditional Monisms of Substance.—Let us now examine the two great, traditional forms of metaphysical monism or monism of substance: materialism and spiritualism. Every one has heard of materialism and most have been warned against it. The fundamental principles of spiritualism, on the other hand, are not so well understood. We speak of these positions as monistic because they teach that reality is composed of one type of stuff, appearances to the contrary notwithstanding. For materialism, this one primordial stuff is matter; for spiritualism, it is mind or spirit. There is a slight difficulty here for the spiritualist does not like the terms stuff and substance.

We shall examine these positions carefully and try to see both their good and their bad features. On the whole, our conclusion will be that both positions—at least as they have been formulated in the past—are inadequate. Spiritualism is a one-sided outlook founded on an idealistic type of epistemology and dominated by religious demands and by the categories of personality. It is opposed to materialism which was founded on a vague sort of realism and upon the mechanical atomism of science and of early speculation.

Because our own epistemology is realistic, we shall find less objection to materialism than spiritualistic philosophers do. We shall, however, point out that traditional materialism has always been weak in epistemology, in its treatment of the categories, and in its presentation of the nature and conditions of human values. It has usually been nothing more than a sketch containing insufficient analysis. It is from this side that I shall estimate it.

Materialism.—In discussing materialism the danger to avoid is to set up a figure of straw and then to pull it to pieces. Materialists have been partly to blame for this situation, for it is very seldom that they have told us exactly what they have meant by matter and what its relation to mind and consciousness was on their theory. Analysis of terms has seldom been their strong point. If questioned, they would probably reply that they meant by matter what the scientists meant by it. Reality would be, then, the physical world as conceived in terms of the results of the physical sciences, something occupying space and in motion according to mechanical laws. For such a view, the physical world is basic, the mother of all things, and mind and consciousness and society must make their peace with it. Of course the dominant view of matter may change with the discoveries of science. Formerly matter consisted of very small, solid particles which impinged upon one another in purely mechanical ways. Such a position is now called mechanical atomism. Matter was supposedly inert, and all changes were merely changes of position in space. To-day with the astounding advances of physics and chemistry matter is conceived as organized energy arranged in patterns. Each kind of atom has its own structure of positive proton and negative circling electrons. Moreover, the theory of evolution has come increasingly to the fore. Both of these changes are certain to affect materialism profoundly. To be fair to materialism, we might need to speak of the old and the new materialism.

Another point is important. Materialists have seldom offered the enquirer well analyzed ideas of mind and consciousness. Only of one thing did they have an inner conviction, *viz.*—that mind and consciousness must somehow be tied up with matter and be dependent upon it. Otherwise, they felt sure that there would be dualism and a gateway for all sorts of superstition.

In what follows I do not wish to do injustice to materialism, for I have much sympathy with what it tried to do, and that

was to develop a naturalistic outlook. Unfortunately, the usual run of materialists over-simplified their task, did not analyze the difficulties which confront naturalism and have been satisfied with statements which are absurd on their face or else too vague to mean much. Passing, then, from materialism as a name for naturalism, let us examine the two theories which have been most popular among past materialists.

There is, first, the theory that consciousness is identical with the motion of the material constituents of the brain or, another formulation, is a form of nervous energy. It is felt that consciousness has its seat in the brain and is to be connected with nervous changes. And this is likely true. *But the technical problem is to conceive this relationship clearly and to state it in a meaningful way.* And the reply which practically all philosophers make is that a mere identification of consciousness with motion or energy, these terms being taken in their scientific sense, is a form of words which can have no more meaning than to say that black is white or heaviness is virtue. A more penetrative analysis of the whole situation and of the nature and reach of our scientific knowledge is necessary. Let me quote the assured statements of Professors Pratt and Windelband. Writes Pratt: "The identification of consciousness and motion indeed can never be refuted; but only because he who does not see the absurdity of such a statement can never be made to see anything. If he cannot see that, though consciousness and motion may be *related* as intimately as you please, we *mean* different things by the two words, that though consciousness may be *caused* by motion, it *is* not itself what we mean by motion any more than it is green cheese—if he cannot see this there is no arguing with him."[1] Windelband takes much the same attitude though he goes farther than, I think, he has a right to go in his assertion of dualism: "Every such statement, however, that consciousness or psychic activity is merely some superior sort of material existence or movement is a quite arbitrary pronounce-

[1] Pratt, *Matter and Spirit*, p. 12.

ment, and tries to give unusual meanings to the words. In the face of our direct experience, which continually teaches us that physical and psychic reality are fundamentally different, the Materialistic position remains a paradox. One might just as well say: Apples are a sort of pears, or, A dog is a sort of cat."[1]

Now the second type of theory has been already suggested. It is that consciousness is an effect of physical processes. It is held that consciousness is a by-product of certain complicated changes in nervous tissue. It is something which arises like a shadow and has, itself, no executive influence upon these physical processes. It is an epiphenomenon or passive accompaniment of the integrative activities of our cortex. To use Mr. Santayana's now famous expression, it is "a lyric cry in the midst of business.' A crude form of the idea of causal materialism is Vogt's[2] dictum that the brain secretes thought as the liver secretes bile.

What objections can be raised against this second type of materialistic theory? In essentials, there are three. There is, first, the objection that the creation by physical processes of a kind of reality which is by hypothesis alien to them is a miracle of the worst kind. Let us remember that the materialist has usually been pretty naïve in his thought of matter—though recent developments have probably resulted in more critical views—because he has given little attention to theory of knowledge. He has tended to assume that matter could be *exhaustively* known in terms of the physico-chemical sciences. Now just what could we mean by saying that consciousness is *produced* by matter as a separate thing? It is the assumption of alienness, of dualism of stuff, to which objection must be raised. Thus materialism does not help us to *understand* the relation between brain and consciousness but leaves it an ultimate mystery. Now it may be that we cannot do better

[1] Windelband, *Introduction to Philosophy*, p. 113.

[2] Karl Vogt, Büchner and Moleschott were leaders of a materialistic movement in German thought in the 60's of last century.

than this, that we are confronted by an ultimate fact, but we have no right to take this attitude until we have analyzed all our terms more thoroughly and seen what suggestion theory of knowledge can give us. We come now to the second objection. It is this, that the production of consciousness or the psychical involves the absolute loss of energy if the psychical is non-physical and is produced or secreted; and such a loss is opposed to the principle of conservation which is accepted by science. It is a ghostly production but surely must involve some slight loss of energy. And the only way to avoid a loss is to hold that the psychical is a form of energy, which brings us back to the first type of theory. There is, finally, the objection that materialism of this type denies the efficacy of consciousness and makes man an automaton whose actions are expressive only of the blind, though very complicated, discharges of nervous energy in his brain. Purpose, planning, reflection, deliberate choice are not effective processes which guide conduct but only reflections of cortical processes of shunting in the internuncial cells, reflections which may give us some idea of what goes on in the brain but which do not affect its course. This objection is a very important one because it raises fundamental issues in regard to cortical processes. Is the brain a mechanical system? Are there levels of response in nature? Have we a right to carry over into our thought of the brain atomic, kinetic theories of change and disregard the fact of integration and apparent novelty of action? Do logical perceptions have anything to do with the brain discharge selected? These are basic questions of the sort that philosophy must meet by analysis. It is undeniable that materialism was too negligent of them in its desire for a facile solution.

A Glance at the History of Materialism.—For even a fair understanding of materialism, a glance at its history is necessary. The general purpose and aim of materialism will be found a valuable feature, something to be reckoned with even after criticism has undermined any particular formu-

lation. As we have already pointed out, materialism has always been the expression of the belief that the physical, spatial world is the only reality and that all forms of reality must somehow be included in it. It represented a persistent drive toward a *spatial naturalism*. We may also point out that materialists have been the constant foes of supernaturalism.

The atomism of Democritus was the first definite expression of materialism of which we have adequate record. He taught that the universe consists of atoms and empty space. These atoms differ from one another in size, shape and position. Changes are due to the motions of these elementary particles which collide and combine in various groupings. Thus far we have a philosophy of nature very similar to the mechanical atomism of our pre-electronic days. But where is there place for mind in such a world? Democritus thinks to meet the difficulty by asserting that mind, also, is composed of atoms, the smallest, roundest and most mobile there are. What, however, does he mean by mind, and what was the relation of mind to the actual sensations and ideas which people have? His notion seems to have been somewhat as follows: The soul pervades the body and consists of very mobile atoms of the nature of fire. In the head these psychic atoms constitute the human reason. It would seem that Democritus thought of perception as a reception of emanations or images of a physical sort through the senses. Higher than perception was reason which involved processes of discrimination. Such a mind or soul is physical and perishes with the body. It should be noted that Democritus had a more directly physical idea of sense-data than is common to-day. It is needless to say that much was left unexplained.

The Englishman, Thomas Hobbes, was the first noted modern materialist. He taught that sensations and ideas are the reactions of the inward parts of the organism to impressions coming from without. Thus he tends to identify consciousness and motion. Materialism reached its height in France

in the eighteenth century. The physician, La Mettrie, in his book, *Man a Machine,* endowed matter with the capacity of acquiring motor force and sensation. The mind has its seat in the body and is extended and material. Much the same view found expression in Holbach's *System of Nature.* His chief purpose was to combat all forms of supernaturalism. Mind is the body regarded under the aspect of certain functions or powers. The physician Cabanis also developed much the same outlook.

Metaphysical materialism breaks out recurrently. It is as though, with the advance of science and the increase of facts which show that man is a part of the system of nature, it is felt that mind and body must be brought together in some naturalistic way. Thus after the decline of Hegelianism in Germany we have scientists like Vogt and Moleschott and Büchner urging crude forms of materialism while, in England, we have the famous *Belfast Address* of John Tyndall declaring that matter contains the potency of life. Let me quote a passage: "Abandoning all disguises, the confession that I feel bound to make before you is that I prolong the vision backward across the boundary of the experimental evidence, and discern in that matter which we, in our ignorance and notwithstanding our professed reverence for its Creator, have hitherto covered with opprobrium the promise and potency of every form and quality of life."

In recent years the form of psychology called behaviorism is regarded by many as materialistic in its outlook. Such psychology has little concern with, or interest in, a subjective consciousness. It is the development of forms of action which it studies. Even neo-realism has been considered as near akin to materialism since it lays so much stress upon the reaction of the centralized nervous system. American pragmatism with its return to naïve realism and its dislike of a private consciousness appears to many to be moving in the same general direction as neo-realism. It cannot be said, then, that materialism is dead. It is simply being transformed.

Historically it set problems rather than answered them. It was a philosophy of affirmation rather than a philosophy of analysis.

Concluding Remarks on Materialism.—At the very beginning of this discussion I pointed out how difficult it was to do justice to materialism. It is, I think, fairest to regard it as an immature form of naturalism pretty definitely connected with mechanical atomism. Its weakness was threefold: (1) it did not ask itself the reach of human knowledge and therefore tended to take the descriptive terms of physical science too literally; (2) it thought of the physical world in terms of atoms in motion and tried to bully mind and consciousness into the framework thus set; (3) it did not take growth and organization seriously because it was essentially a pre-evolutionary system. The traditional criticisms of materialism which we examined turned upon these points. Consciousness cannot be simply identified with motion, nor is consciousness a kind of physical energy. Inert atoms cannot secrete consciousness, nor can consciousness be thought of as controlling or directing the movements of atoms as these are usually conceived. It is clear that, if we are to solve the problems suggested by materialism, we must bring to bear the results of modern science and the suggestions which epistemology may have in store for us. In short, materialism has essentially been an attempt to take metaphysics by storm.

While philosophy was under the influence of epistemological idealism it was customary to dismiss materialism because it assumed the actual existence of a realm independent of mind. Atoms, it was said, are only imaginary constructions for the descriptive purposes of science; they are not realities. If we could grant such an epistemology, this objection would be final and conclusive. Unfortunately the development of philosophy these years has been in the direction of realism, and so this long-valued epistemological argument has lost much of its force. It still retains the partial value of calling

attention to the epistemological query, Just what do we know about matter?

The growth within science itself has been away from the simple schema of earlier days which saw all things as a mere complex of independent atoms of a brick-bat sort striking one another; in other words, a universalization of the kinetic theory of gases. Science has been able to penetrate into the atom and now speaks of electrons and quanta of energy. What is usually called an electrodynamic view has taken the place of the inert and opaque unit of former days. Now I do not mean to suggest that this better knowledge has destroyed materialism; it has only transformed it. But something else has occurred. The growth of the biological and the social sciences has led to a realization of the significance of time. We no longer think that it is enough to understand the ultimate material out of which things evolved; *we want to know what things actually are after they have evolved, what their properties and capacities are.* Because biology and psychology have secured standing in science, no scientist plays fast and loose with such terms as consciousness and mind. It is realized that the grave, primary problem is to find out what we mean by these terms and how we can relate them, not to primitive matter, but to evolved organisms. In brief, neither science nor philosophy is any longer tempted to take reality by storm. Traditional materialism may, therefore, be said to be a thing of the past. We must press beyond its external identifications and assertions to an analysis of fundamental concepts like space, time, quantity, quality, relation, organization, novelty, behavior, content, life, mind, consciousness. We must penetrate more deeply into the life of nature and follow it, as it were, from level to level until it rises into mind and consciousness.

One last point in conclusion. Metaphysical materialism does not imply ethical materialism or low ideals and values. There is, in fact, no logical connection between the two. No theory seeks to deny the facts of human life. And if people

find satisfaction in beauty and friendship and are moved to conserve and increase them, that is a fact which any metaphysics must acknowledge. Again, it is not true that metaphysical materialism necessarily has evil consequences. Many noble and high-minded men have been materialists. But it is true that, in the final analysis, ethical categories like freedom, deliberation and responsibility must be met and interpreted in the light of our view of reality. From the time of Kant, at least, thinkers have found it difficult to confine human action in the strait-jacket of atomic mechanicalism. Freedom for man, necessity for nature, has been one verdict. But this antithesis is itself a crucial challenge to the traditional materialism.

Let us now examine the other type of traditional metaphysical monism. We shall, I think, find that it brings out certain facts which should be emphasized and yet that it also seems unable to do justice to all the facts. Like materialism, it is a too hasty and one-sided metaphysics.

Spiritualism.—Spiritualism is the accepted antithesis of materialism. These two systems have been like doughty champions in the lists ready at all times to break a lance together.

Spiritualism may be defined as the doctrine which maintains that all existence is mental or spiritual. It is a better term than idealism for two reasons: First, idealism has come to be identified in exact philosophy with epistemological idealism; and, second, idealism as a term has too many associations with ethical and religious idealism, that is, with eulogistic attitudes, to serve well as a technical metaphysical expression. Philosophy has as much need as any other science for unambiguous terms. When we say that spiritualism is a metaphysical position we mean that it is a theory of the ultimate nature and character of the stuff of reality. In essentials we may say that it holds that the physical world is an appearance and that personality is nearer the nature of ultimate reality. Some spiritualists are *pluralistic* and assert the relative independence and autonomy of individual souls or minds, while

others are *singularistic* and stress the inclusive and dominating unity of the whole.

Spiritualism is founded on two basic arguments. The first is idealistic epistemology of the Berkeleian or Kantian tradition. This argument is directed against physical realism. We have already examined this argument sufficiently and tried to show its erroneousness. We have also tried to demonstrate that Kantianism and Hegelianism rested on this rejection of physical realism no matter how earnestly they aimed to overcome subjectivism in their treatment of experience and of the relation of the individual to the whole of reality. It is generally acknowledged that Hegelianism never did justice to nature and the sciences of nature. Its strength lay in the social and historical fields and in its influence on philosophy of religion. To appreciate spiritualism, then, we must realize that it is founded on the supposed absurdity of physical realism.

Supplementing this first argument is the second, that we have an intuition, or sense, of our own existence as spiritual, or immaterial, beings. Augustine, Descartes, Berkeley, Leibniz, Bergson, all contain this element. Descartes expressed it in the famous phrase, "Je pense, donc je suis," "I think, therefore I am." Berkeley stressed the same point in his assertion that we have a *notion* of the self as active in contrast with the passive ideas we perceive. In our own day, we are fortunate in having a philosopher who is also an artist in the use of language to express this intuition of the self. In his *An Introduction to Metaphysics,* Bergson writes as follows: "There is one reality, at least, which we all seize from within, by intuition and not by simple analysis. It is our own personality in its flowing through time—our self which endures. We may sympathize intellectually with nothing else, but we certainly sympathize with our own selves. When I direct my attention inward to contemplate my own self (supposed for the moment to be inactive) I perceive at first, as a crust solidified on the surface, all the perceptions

which come to it from the material world . . . Next, I notice the memories which more or less adhere to these perceptions and which serve to interpret them. These memories have been detached, as it were, from the depth of my personality, drawn to the surface by the perceptions which resemble them; they rest on the surface of my mind without being absolutely myself. Lastly, I feel the stir of tendencies and motor habits—a crowd of virtual actions, more or less firmly bound to these perceptions and memories. . . . But if I draw myself in from the periphery towards the centre, if I search in the depth of my being that which is most uniformly, most constantly, and most enduringly myself, I find an altogether different thing. There is, beneath these sharply cut crystals and this frozen surface, a continuous flux which is not comparable to any flux I have ever seen. There is a succession of states, each of which announces that which follows and contains that which precedes it . . . Whilst I was experiencing them they were so solidly organized, so profoundly animated with a common life that I could not have said where any one of them finished or where another commenced. In reality no one of them begins or ends, but all extend into each other."[1] Thus introspective intuition lays bare the surging continuity of the self.

Probably Leibniz was the first thorough-going spiritualist. Beginning with the conception of substance as that which exists *per se,* he added the further premise that only that which has power of action can exist. But, he maintained, matter is passive since extension is its essence (Descartes). Therefore, reality must be immaterial and unextended. Now it is clear that this argument is relative to Cartesianism. Modern science has moved far from Cartesian cosmology. Energy goes along with spatial structure in the physics of to-day. Why cannot the active be material and extended? Certainly we have here a question which we cannot lightly pass over. Let us remember how it arose in the thought of Berkeley also.

[1] Bergson, *An Introduction to Metaphysics,* p. 9 ff.

Let us briefly examine the system of a recent spiritualist, the great German psychologist, Wilhelm Wundt. Wundt seems to argue that the contrast between the physical and the psychical is one which grows up within experience. He then points out that the physical sciences develop the one term of the contrast and arrive at the atom as the ultimate physical unit, while psychology investigates the other term and reaches the assumption of an ultimate qualitative unit called the will. It is the task of the metaphysician to harmonize these two units. The hypothesis which, according to Wundt, does this most satisfactorily is the assumption of a will-atom as the primary element of reality. Now, as Höffding points out, Wundt really argues much as Leibniz did: "The world must be cogitated either as material or else as spiritual unity. We can no other. Wundt's choice is not doubtful. The only activity immediately given is, and remains for us, our will."[1] But is this dilemma unavoidable? Cannot the world at a certain level be both material and spiritual? It is this question which we shall later investigate.

But another point must be raised. Do we have in psychology atomic units analogous to chemical atoms? And, as Höffding notes, in his psychology, Wundt "does not even reckon will among the elements of consciousness. He treats the phenomena of will as the most composite and special form of conscious life, and numbers only sensations and feelings among the psychical elements." Thus it cannot be denied that Wundt's metaphysical hypothesis of a qualitative will-atom as the primary element of reality has slight connection with the facts of psychology. Psychology is coming more and more to stress function and integration. Its physical parallel is integrative physiology rather than physics. But more of that later.

Types of Spiritualism.—While all spiritualists are deadly enemies of materialism and naturalism, they are not without internal dissensions. The older tradition is represented by

[1] Höffding, *Modern Philosophers*, pp. 29-31.

Berkeley and Leibniz. Berkeley is a theist who seeks to do without the physical world which is for him a misinterpretation of the orderly sequence of perceptions or ideas aroused in a plurality of souls by God. Leibniz is a pluralist of much the same fashion except that he denies causal interaction between souls and postulates a preestablished harmony or agreement between their internal states. After Kant, a new form of spiritualism arose which stressed a world-mind or self. On the whole, the tendency now became singularistic. The absolute came to the front. Anglo-American Hegelianism represents this phase; and, as we saw, this stress on the whole, which regards anything short of the whole as appearance, dominated English thought until the end of the nineteenth century. Bradley and Bosanquet are striking exponents of this outlook. It is customary to speak of this form of spiritualism as objective idealism. And I do think that this term is descriptive. It is founded on an idealistic epistemology and yet tries to escape subjectivism. It does this through an appeal to a more inclusive experience than that of the individual. But there are still other forms of spiritualism. With Schopenhauer, the basic reality back of physical appearances is *Will;* with Von Hartmann, it is the *Unconscious.* And there is, finally, a movement which has had many recent advocates, the movement whose thesis is that the psychical is the reality of which the physical world is the appearance. This is *panpsychism.* It is represented by James Ward and C. A. Strong among others.

It is worth while pointing out that, with the development of spiritualism, the idea of substance became modified. In both objective idealism and panpsychism the old associations of a substance existing by itself and possessing attributes in an intrinsic way disappeared. In place of it arose the stress upon the psychical and upon the process of experience. We have in this the mutual influence of the two arguments to which we called attention, the *epistemological* and the *introspective,* both of which may be said to have worked along the lines of a psychological approach to metaphysics. Let me in-

dicate very briefly the working of this motive in recent objective idealism and panpsychism.

It is easy to see how the objective idealist who is strongly influenced by psychology of the introspective type and who is an expert in psychological analysis is led to this empirical type of spiritualism. Thus F. H. Bradley's chief argument in favor of spiritualism boils down to the *argument from content:* "Find any piece of existence, take up anything that anyone could possibly call a fact, or could in any sense assert to have being, and then judge if it does not consist in sentient experience."[1] Combine this with the logical standard of coherence or systematic unity, and objective idealism of the absolutist type inevitably follows.

The panpsychist is more of a pluralist and more interested in the physical world. Traditionally, he has either been under the influence of Leibniz or has reached his world by analogy. The psychical is the only kind of reality that we are *acquainted with;* why not hold that it is a fair sample of reality? Here again we can see the influence of the two arguments basic to spiritualism. A surprisingly large number of psychologists have been drawn in this direction. C. A. Strong, for instance, has been doing his best to harmonize panpsychism and critical realism.

We must leave it to the historian of philosophy to present and analyze the many variations of spiritualism. Human ingenuity and mental keenness of the highest order have been at work constructing speculative systems which are at the very least of great imaginative and artistic interest. But no system is stronger than its premises.

Conclusions.—Our study of these two great traditional types of metaphysical monism has confirmed us in the suspicion that each is one-sided. The world is a spatial, durational, executive system of whose general, and even detailed, structure and behavior the sciences give us knowledge. It is the massive realization of this condition which spiritualism

[1] *Appearance and Reality*, p. 145.

has never done justice to. It is a world in which men are born in accordance with the laws of heredity from a germplasm which reflects the hazards and chances of millions of years. Ever more clearly, we realize that man and nature, the human mind and its setting, are inseparable. To all this, traditional spiritualism has been partially blind. But, as knowledge has accumulated in the biological and psychological sciences, such an attitude is less and less plausible. In the second place, subjectivism in epistemology has also lost standing and this support has been removed.

Materialism and spiritualism can be best understood as extremes, each strong in its own favorite realm. Thus each challenged and supplemented the other. While materialism sought to express the implications of the first broad generalizations of the physical sciences, spiritualism was at home in society and in the subject of values. It insistently called attention to the conscious self and to the concepts of purpose, reasoning and valuation which the physical sciences had ignored because they were not in their purview dealing, as they did, chiefly with inorganic nature. We may justify both extremes by saying that their warfare forced attention to the genuine problems of philosophy. It is clear that the modern thinker with his greater resources must sink his shaft deeper. But before we begin this systematic work, let us examine the other traditional position, *dualism*.

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CHAPTER XV

DUALISM *VS.* EVOLUTIONARY NATURALISM

Natural Dualism.—In the preceding chapter, we examined two characteristic forms of monism, materialism and spiritualism. These, we saw, were opposed efforts to reduce the world to one fundamental kind of reality. One of the interesting things about them was just the fact that they were both so assured and yet so far apart. This, in itself, would lead us to doubt the adequacy of either to cover all the features of human experience. The materialist proclaims that reality is matter and that there can be no question as to general characteristics of matter. The spiritualist is equally certain that all reality is mental and that every one knows what the mental is. Our own conclusion was that both ontologies are too facile. Neither is founded on a satisfactory epistemology, and neither does justice to the distinctions which we seem inevitably to make in our experience. Each, as we said, is right in its main emphasis and wrong in its denial. Materialism expresses the fact that we are children of nature, and that nature is a tremendous spatio-temporal process which we are forced to acknowledge. Spiritualism takes its stand on what is quite obviously true of human nature and the purposive activities of human, social beings.

It is not surprising that reflection on the inadequacy of both materialism and spiritualism has led many thinkers to champion *dualism* as at least a more valid position. *If one of these two realities cannot be reduced to the other, why, then, we must accept both.* It is held that both physical things and selves are revealed in experience and that these two classes

of things are obviously different from each other and equally ultimate. A few quotations will make this rejection of materialism and spiritualism in favor of both matter and mind somewhat clearer.

"The plain man," writes Fullerton, "finds himself in a world of physical things and of minds, and it seems to him that his experience testifies directly to the existence of both. This means that the things of which he has experience appear to belong to two distinct classes."[1] Now let us recall our epistemology sufficiently to remember that the plain man is a naïve realist and thinks that he "sees" physical things in a literal sort of way, that the physical thing is open to his inspection or given. Such being the case, is it surprising that he contrasts these physical things with the flow of his thoughts, feelings and emotions? These are private and personal; those are public and common to all observers. Is it not absurd to try to reduce the one class of things experienced to the other?

A moderate statement of the position of the natural dualist is to be found in the writings of Henry Sidgwick. Natural dualism is for him the position of common sense. "For there is this advantage in putting questions from the point of view of Common Sense: that it is, in some degree, in the minds of us all, even of the metaphysicians whose conclusions are most opposed to it—such as the extreme Sensationalist or Idealist. It is the view with which we all start when we begin to philosophize. . . . In saying this I do not mean to affirm—as some who have maintained Natural Dualism as a philosophical conclusion have affirmed—that Natural Dualism is involved in the *original* presentation of the objects of experience to the experiencing mind. All I affirm is that we find it in our ordinary thought when we begin to reflect on it, nor can we by the utmost effort of memory recall a time when we did not explicitly hold it. If the belief in an external material world existing as we know it independently of our

[1] Fullerton, *An Introduction to Philosophy*, p. 202.

knowing it—so that our knowledge of it does not affect its existence—if this belief is the result of inference from data given originally as merely mental fact, this process of inference preceded the stage of conscious reflection. I ought further to explain that in speaking of Common Sense I do not mean entirely unscientific Common Sense, but the Common Sense of educated persons rectified by a general acquaintance with the result and methods of physical science."[1] From this recognition of *epistemological realism*—for that is what we have here—Sidgwick passes quickly to *metaphysical dualism*. "Since Descartes, philosophical thought has found no difficulty in distinguishing the thinking, feeling, willing thing that each one of us is conscious of being, *from the complex aggregate of extended solid particles which each of us calls his body.*"[2]

Cartesian dualism and the motives which sustain it are the concrete opponents which any attempt at a more critical and inclusive monism than materialism or spiritualism must face. It will be well for us, therefore, to recall it. It will be remembered that Descartes taught that the essence of the world of thought is thinking. In other words, Descartes formulated a dualism of substances, alien to each other, whose respective essences or depths are revealed in extension and thought. Thinking reality is not extended, and extended reality does not think. But this formulation reflects the scholastic notion of substance and essence. Thought is supposed to grasp in a completely revelatory way what is distinctive of these two kinds of reality, to light them up, as it were. But let us recall our own epistemology. When we say that the physical world is extended, does this mean any more than that it is measurable and that the parts exclude each other dynamically? And this is surely *knowledge of a descriptive sort* about physical things, but it is just as surely no such complete revelation of the stuff of the physical world as Descartes assumed.

[1] Sidgwick, *Philosophy, Its Scope and Relations*, pp. 42-43.
[2] *Ibid.*, pp. 52-53.

While we should not go to the other extreme to which Leibniz and the idealists in general have gone and assert that scientific knowledge is not knowledge, we must bear in mind the reach and character of it. We shall, in fact, argue that science deciphers the *structure* and *behavior* of physical objects. We have seen good reason to be skeptical of Cartesianism both as regards the nature of matter and as regards the mind-soul. We shall try to show that the situation is more subtle than dualism admits.

Motives in Favor of Dualism.—Let us now seek to appreciate the reasons why mind and consciousness are so frequently thought of as alien to the organism. It is well to become aware of these motives because they are constantly operating in our minds. I shall try to be as explicit and clear as possible because I regard this problem as very crucial. We shall, of course, examine the question in more detail when we come to consider the mind-body problem in the light of modern biology and psychology; but certain general considerations which determine a sort of customary attitude can be studied at this stage.

It is well, I think, to have definite terms for these dualistic motives even though they may sound a little formidable. I shall accordingly speak of the *epistemological*, the *methodological*, the *categorial* and the *religio-animistic* motives. These motives re-enforce one another.

We are now so familiar with the epistemological motive that we need add little to what we said above. Natural dualism is largely the expression of naïve realism. If we accept critical realism, the whole situation alters. We must anticipate here what we shall bring out in more detail in our later study of the mind-body problem. The essential point is this, that we have a double knowledge of the organism, what may be called a descriptive, external knowledge by means of, and through, data of the sort the physical sciences achieve, and an introspectional knowledge of the sort that psychology gains. Now the first kind gives us descriptive knowledge of the char-

acteristics of physical things, such as position, shape, size, internal structure, composition, behavior but it does not offer us an intuition of the very stuff of its objects. The very situation of the knower prevents that. Knowledge is mediated by data, which alone, are given. But, in the case of introspection or in knowledge of the psychical in general, there is not the same separation between the data and the object. *We are simply trying to know a little better what we already experience or feel.* But only the epistemological expert realizes this situation. The ordinary level favors the view that we can just see that physical things cannot contain consciousness.

It seems to me that the advance of science of recent years with its subtler views of matter is gradually working against anything akin to naïve realism and, consequently, against natural dualism. I suggest that the student think pretty persistently about this drift.

The methodological motive is as follows: The physical scientist's interest is in the physical world as this can be shown by the methods and technique of the physical sciences. Is it not inevitable that he come to think of the physical world *solely* in terms of the knowledge so gained? The physical is that which can be known and handled in this fashion. This methodological consequence shows itself in the attitude of the man trained in physical science toward psychology and the question of mind. These fields are additional to nature. Thus Hobson is philosophically alert and yet in his book entitled, *The Domain of Natural Science,* this methodological division asserts itself: "We are thus led to what must be regarded as a limitation upon the claims of Natural Science, in the sense of the term here adopted, to the power of theoretically extending itself so as to become a complete philosophy of Physical Nature, independent of all psychical factors. Physiology is completely justified in assuming this independence as a methodological principle, and experience alone can decide how far it will be able to extend its present far-

reaching results in accordance with that principle."[1] The physical world tends to be considered as that which can be studied and understood *only* in terms of the methods of the traditional physical sciences.[2]

This methodological attitude fits into, and is reenforced by, what I have called the categorial motive. The knowledge gained by the physical sciences is in terms of spatial structure, quantity and behavior. What has this to do with consciousness, with feeling, volition, purpose, memory, character? The basic concepts are obviously different; how can they be correlated? This disparity in the categories, or fundamental concepts, of the two realms is readily interpreted in terms of the epistemological and methodological motives which we have already discussed. Perhaps this contrast has most clearly come to a head in what has been called a *dualism of process.* The physical realm has been thought of as a domain of purely mechanical happenings, while the mind is notoriously selective, synthetic and teleological. If this dualism of process be true, the two domains undeniably fall apart. The assertion of a dualism of process arose with the development of the mechanical interpretation of nature and was an element in Cartesian dualism. The laws of the two substances were, he held, different. The animal body is a mechanism.

A recent statement of this dualism of process by a defender of dualism will enable us to do justice to its significance. "What I mean by a Dualism of Process is now, I trust, plain enough. Whether reality is made up of one kind of stuff or whether there are two or more kinds of being within it, there are at any rate two kinds of laws, two kinds of processes to be found in the activities of the real beings of the world. Throughout the vast spaces of the physical universe where matter and energy come into no immediate relation with conscious persons, the laws of physics and chemistry have abso-

[1] Hobson, *The Domain of Natural Science*, p. 70. The third chapter of this work is extremely interesting.

[2] As we shall later see, one of the great controversies now on is whether psychology is a physical science.

lute sway. Here no energy is created or destroyed, regular mechanical sequence holds, and on the basis of the eternal physical laws and the actual configurations of matter and energy an omniscient mechanic could predict with unerring exactness the whole course of the future. . . . The beings we know as persons have their own ways of acting, their own "laws," if we insist on preserving the word and transferring it to a new realm—ways of acting which are not reducible to physical laws. These personal beings have, as I said above, become "organic" to parts of the physical world. In the activities of the human body, therefore, the two forms of process, the two kinds of "law," meet. The result is both cooperation and conflict. . . . The determining power in some of the acts of human bodies is to be found not in the physical and chemical processes but in processes of an utterly different nature, namely, those of the rational and purposive will."[1]

This is a forceful statement. But let us note the assumptions within it. Very few careful scientists would make as sweeping statements about the reign of mechanical laws and the possibility of prediction in nature by a postulated omniscience as Professor Pratt does. The laws of science are descriptive formulæ which comprehend the data gathered by science; and the days of the deductive and dogmatic interpretation of the whole of nature in accordance with a few simple laws has passed. The various sciences have become more autonomous and empirical. Just what the range and variety of physical laws is is one of the pressing problems of the day. The philosopher must be on his guard against having the dramatic simplifications of the past in place of the actual situation of the present. But this quotation reveals in striking fashion the force of the categorial motive back of dualism.

We come, finally, to the religio-animistic motive back of dualism. Animism is the position that the human body is inhabited by an *anima,* or spirit, which is temporarily active

[1] Pratt, *Matter and Spirit,* p. 184 ff.

in it but which can depart and exist for some time at least outside of it. Such a belief is very ancient. Dreams, trances, death, and memory are probable causes of its appearance and acceptance by the human mind. When we come to examine the mind-body problem in more detail, we shall discuss animism more fully. At this point, we are more concerned with its persistent influence in favor of dualism. It is obvious that animism is involved in the traditional religious notion of the soul, and the hope of immortality seems bound up with the acceptance of some such notion and the dualism it implies. It is not to be wondered at, then, if this religio-animistic bias acted as an emotional support for the other, more technical, motives back of dualism.

This completes our discussion of the reasons why the physical and the mental are so readily held to be distinct. The inability of past thinkers to achieve a satisfactory monism must also be regarded as an influence in favor of dualism. Neither naïve materialism nor spiritualism is satisfactory; what other possibility is there?

Objections to Dualism.—We have, I judge, done full justice to dualism. And that, of course, has been our purpose, for philosophy is science and not casuistry or mere dialectics. It is our desire to develop an outlook which will cover the facts in a synoptic and comprehensive way, not forcing us to belittle this feature or to hurry rapidly past that other one. Having, therefore, brought out the reasons which have seemed to so many to lead inevitably to dualism, let us now consider the objections which dualism must face.

We can summarize the queries and objections which spring to our minds when thinking of dualism under three headings: (1) The status of mind and consciousness, (2) difficulties in understanding the relations of two such opposed kinds of realities as mind and the physical world; and (3) the greater simplicity of monism. These queries are interwoven but represent different angles for reflection. Their discussion will prepare us for the exposition of a standpoint which, I am

persuaded, is by far the most plausible offered to metaphysics, *viz.*—evolutionary or emergent naturalism.

The first query turns around this point that the physical world seems to our knowledge of its self-conserving nature far more self-sufficient than mind and consciousness. After we examine the ideas we have of space, time, matter and energy in later chapters, this difference between the two realms which dualism posits will become even more obvious but the main contrast can be stated even now. Mind has had an evolution from humble beginnings step by step with the development of the central nervous system. Levels of intelligence is one of the commonplaces now of psychological science. The scale from positive and negative response with reflexes and tropisms to well differentiated instincts and thence to generalized intelligence is discernible. Mind is clearly organic to nature and to the conditions and demands of the environment. It is directed to the survival and well-being of the creatures which have sprung into life under this sky. And everything indicates to us that, just as life had an origin at some time in the geological past, so did mind get born in relation to possibilities which life offered. So relative to the total situation is mind that to assign it a separate being and status, intrinsic to it apart from physical nature, seems unjustified. Such an assignment would present itself as a last resort if all else failed. I am quite aware that this sense of the intrinsic relation of mind to nature is the product of the shifting of outlook which has come about with the growth of the biological sciences of the nineteenth century and which the work of the twentieth century has reenforced, and that it is in opposition to the animistic tradition; nevertheless, I am convinced that this new perspective has come to stay. And what is true of mind seems even more true of consciousness. It is so evanescent, so much a process of change which varies with the state of the organism, so dependent upon external stimuli and upon emotional tensions, that it seems more an organized *complex of events* than a self-sufficient substance

able to stand over against the physical world as autonomous and sovereign.

Dualism's strength, as we have taken pains to show, lies in the weakness of materialism and spiritualism. It is time that we called attention to the fact that it, also, has weaknesses.

From Descartes to the present, dualism has been hard pushed to make in any degree intelligible the nature of the relations between two kinds of reality, one of which is spatial and the other supposedly non-spatial. How can they meet to influence each other? If that which is non-spatial interpenetrates the spatial and so brings itself to bear upon it, is it not itself active in space or into space? And, in so thinking it, are we not making it at least quasi-spatial and cognizant of spatial relations? It must either know where to act or its non-spatial dimensions and distribution must somehow analogically correspond to space. My mind acts in relation to my organism and does not pass to yours. How is it able thus to cling and attach itself, to grow as my brain grows, to weaken as my brain becomes senile? Of a verity, dualism, also, has its difficulties.

And, then, besides the spatial dilemma—which has become more, rather than less, obtrusive with the growth of realism in philosophy these last decades—there is the causal quagmire. Science is ever more persuaded that nature is a closed system in which energy is perpetually being transformed, integrated and dissipated but never lost. But dualism of the metaphysical type cannot accept such a closed system without denial of the efficacy of mind and consciousness. There are many dualists who are parallelists, it is true, and take refuge in the belief that mind and energy perform a shadowy minuet which never ends in an embrace; but parallelism is rather a counsel of despair for the dualists. They realize well what it implies for events in this sublunary sphere, for nature and nurture, for ethics and social reform, for artistic creation. Who plays the music for the minuet? Why should matter take on the delightful shape of MacMonnies' Bacchante be-

cause the artist dreamed a dream of joyous abandon? Why should two great oceans be joined because a president and a Congress decreed it? Is the belief in the efficacy of mind the last stronghold of magic? But if the dualist is so convinced of the efficacy of mind that he asserts that interaction rather than parallelism is the truth of the situation, he must make clear to us something of the method and application of this interaction. How does mind *insert itself* into physical processes? And how do physical processes control the tension and direction of mind? Few have offered to inform us how this is done. And then there is the question of entrance of physical energy into the mental realm, and of the corresponding transference of mental energy into physical energy. What, then, becomes of the disparateness of the two domains? It is clear that dualism, also, has its obstacles to overcome.

Finally, dualism is a more complex interpretation of reality than is monism. Other things being equal, the human mind prefers the simplest solution. Just as, in chemistry, thought was never satisfied with the mere admission of eighty odd elements having nothing in common except general physical properties and welcomed the analysis, made possible by recent experiments, which made the elements comparable, so in metaphysics the human mind will always seek a bond of union between mind and matter. Particularly will this be true of the scientific, naturalistic direction of reflection.

Evolutionary Naturalism.—We have already hinted that there is still another possibility, that materialism, spiritualism and dualism, the traditional solutions, by no means exhaust the *subtle situation* which confronts the human mind in its effort to locate itself within reality and to gain some notion of the nature of reality. Perhaps the chief fault with the traditional solutions was that they tended to take their terms ready-made like the parts of a picture puzzle and merely sought to put them together. Could there be much hope for such a method? Surely this basic problem requires that all our terms be analyzed in the light of our present knowledge

and of the results of a critical epistemology. What are matter and energy? What are mind and consciousness? How are they known? What is the reach of this knowledge? Are mind and consciousness alien to a spatial system? Is the physical world always a blind, mechanical system, or are there levels of process in nature genetically related to one another? These questions surely give point to the assertion that philosophy continues, and builds upon, science and that it cannot do this unless it critically probes the terms used. Unless it do analytic and constructive work of this sort as a preparation for its own hypotheses, it is dogmatics rather than philosophy.

At the present stage of our study of metaphysics, we are in a position only to outline the probable results of such a critical mode of procedure, their general tenor, so to speak. It is always difficult to select a satisfactory name in such a case; and yet the history of human thought has been kind in this instance and presented us with the term *naturalism*. We saw that materialism was a hasty sort of naturalism. What, then, is naturalism? *It is an outlook or attitude toward reality rather than a fixed and dogmatic set of principles or formulæ.* And, as an outlook, its ideas will grow and ripen with knowledge and reflection. The spirit of naturalism is very well expressed, curiously enough, by a broadminded German theologian. I quote from Professor Otto's *Naturalism and Religion:* "At first tentative, but becoming ever more distinctly conscious of its real motive, naturalism has always arisen in opposition to what we may call 'supernatural' propositions, whether these be the naïve, mythological explanations of world-phenomena found in primitive religions, or the supernatural popular metaphysics which usually accompanies the higher forms. It is actuated at the same time by one of the most admirable impulses in human nature—the impulse to explain and understand, and to explain, if possible, through simple, familiar and ordinary causes." It is evident that the spirit of naturalism is identical with the spirit of science.

Naturalism's tendency has always been monistic rather than dualistic. For it, the world has been a spatio-temporal, causal process. So significant for the comprehension of this process is the idea of evolution that the position which I am suggesting may best be called evolutionary naturalism.

Conditions Evolutionary Naturalism Must Fulfil.—We have successively examined and questioned materialism, spiritualism and dualism. Consequently, we should by this time be well aware of the conditions which evolutionary naturalism must fulfil if it is to be acceptable. These conditions may be brought under three heads: First, evolutionary naturalism must do justice to the different kinds of process, inorganic, organic, mental and social, which exist in our world; second, it must make comprehensible the efficacy of mind and consciousness; third, it must meet the arguments for metaphysical dualism which we discussed under the headings epistemological, methodological, categorial and religio-animistic. While the remainder of the book with its detailed analyses will alone make clear the sort of cosmology which is implied by evolutionary naturalism, we can in this place briefly discuss these general conditions which evolutionary naturalism must fulfil.

The first condition calls attention to the strength of dualism as against a purely mechanical type of naturalism. Here we may again use that stout defender of dualism, Professor Pratt, as our witness: "If evolution be taken to mean a process of continual change in the time stream such that, at certain junctures, something genuinely new may arise, then evolution and the Dualism of Process are by no means incompatible. If, on the other hand, by evolution we mean a perpetual unrolling of the eternally given, such that each new stage was predictable from the preceding one, that no really new thing is possible, and that

'With the first clay He did the last man make,'

then plainly we must choose between evolution and Dualism. They can hardly both be true. For conscious selves and their ways of acting are different in kind from material things and

their mechanical laws. . . . Purely mechanical processes cannot account for that which is by definition non-mechanical.'' [1] Is this not excellently stated as a sort of dialectical contrast? While there is in it too little awareness of the situation in the sciences, of the re-analysis of mechanics, of the replacement of the inert atomistic mechanics of the past by electromagnetic mechanics, of the admission of integration and new modes of behavior in nature, of a more empirically-minded recognition of novelty in nature, there is a stubborn refusal to reduce the higher to the lower that is admirable. Evolution must, as I have said elsewhere, be taken seriously. The first condition of a satisfactory evolutionary naturalism is an interpretation of the meaning, and the limits of the validity, of the so-called mechanical view of the world.

The second condition is that evolutionary naturalism must make comprehensible the efficacy, or functional significance, of mind and consciousness. In this regard, it is to be differentiated from materialism, as materialism has ordinarily been interpreted. It is clear that, as a monism, mind and consciousness must be held by evolutionary naturalism to work *within* individual systems rather than *upon* them as dualism holds. The problem is that of the general nature of an integrated system which may, at one and the same time, be said to be physical and mental and to contain consciousness. No matter how 'organic' dualism may hold the relation of mind and body to be, the influence of one on the other must be external or of the interactionistic type. It is the task of naturalism to conceive of the efficacy of mind and consciousness as *intrinsic* to the organism. It follows that this second condition is insoluble apart from the first condition. A system truly characterized as mental in its action cannot be purely mechanical.

The third condition demands a revision of the ordinary, confused interpretation of epistemological realism. Because an object of our knowledge is independent of any personal

[1] Pratt, *Matter and Spirit*, p. 186-7.

act of knowing which occurs in the consciousnesses of individuals, it does not follow that this object is in its nature alien to consciousness. *For example, because another human individual is independent of my act of knowing him, it does not follow that he is unconscious.* Now the sort of knowledge gained by the physical sciences may be perfectly true *without exhausting their objects.* If, as we have concluded, this knowledge by means of the data of external observation does not involve an intuition of the stuff of the object but only knowledge about the characteristics of the object, there is no epistemological foundation for the metaphysical dualism of two kinds of stuffs, which goes back to Descartes. There has been, however, both in common sense and in much of science a tendency to assume that matter is penetratively intuited. Something of what might be called a naïve substantialism lingered in the background of thought; of this we must get rid. We must not take human knowledge of the physical world for more exhaustive and penetrative than it is. We must appreciate its categories and nature at their true worth, neither belittling them as the agnostics do nor overestimating them as do those uncritical dogmatists who have little imaginative appreciation of the stark uniqueness and complexity of the situation.

It is a curious fact that many scientists of a speculative or synthetic temper who were at first inclined to naïve materialism swung later to what may be called the double-aspect theory, *viz.*,—that organized matter has other sides to it, or possibilities, which mechanical atomism did not recognize. In his own way, Haeckel saw this. He endows matter with sensation and will.[1] And we have seen that Tyndall saw in matter the promise and potency of life. In fact, science is much more modest in its claims than the dualist, who claims to tell us what the physical world is according to science, actually is.

Concluding Remarks.—This chapter has been unavoid-

[1] Cf. Ernst Haeckel, *The Riddle of the Universe*, p. 220.

ably difficult. Its purpose has been to do justice to dualism and yet to indicate the assumptions which dualism tends to make. We are surely beginning to see that there is no royal road to metaphysics but that we must make a careful analysis of the basic concepts of science in the light of a critical epistemology. The suggestion which we have thrown out is that the principle of evolution will lift us beyond the flat oppositions of dualism. We must study the results of the various sciences to see what they indicate. In other words, we will come back to ontology after we have thoroughly examined the problems of cosmology. It is to cosmology that we now address ourselves.

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CHAPTER XVI

THE QUANTITATIVE ASPECT OF THE WORLD

The Basic Characteristics of the World.—The theory of knowledge which we have been led to adopt as the most plausible maintains that the physical world is real and substantial and has a specific nature, or characteristics, which our minds seek to comprehend. The claim that there is a logical identity between the characteristics of the world and our true thought of them seems to be an ultimate demand which we can examine and seek to justify but which we cannot reduce to something still more ultimate. If the world is not revealed in our thought, our basic intellectual efforts are futile. But we have seen no good reason to become skeptics in this matter and will therefore proceed on the assumption that the characteristics of nature are comprehended in critical thought.

The degree of insight into the nature of things which we possess varies with the accumulation of fact and theory. The human mind has been forced to besiege reality and to wrestle with it through the centuries. The history of both philosophy and science is a chronicle of effort and of earned success. It cannot be too often repeated that knowledge is an achievement. And knowledge is a sustained growth in breadth and depth. From a mere formal outline, it becomes insight into structures, relations, energies, levels, possibilities.

It is the task of the special sciences to examine the details and to do persistent exploratory work. What we are concerned with in philosophy is the general structure of reality as this stands out for logical reflection. Now it is the custom of philosophy to speak of the *general characteristics* of nature

as revealed in our thought as the *categories*. The categories are the basic features of our thought of the world. And it is the belief of the critical realist that there is the amount and kind of identity which knowledge requires between these categories and the actual characteristics of things. I presume that such a belief lies at the basis of the whole intellectual, or rational, tradition of human thought. The world has a categorial structure which thought discovers and reflects. Let us admit that many thinkers, especially those of the idealistic tradition, such as F. H. Bradley and Henri Bergson, dissent from such a belief. They have attempted to show contradictions and inadequacies in the forms of human thought. We can only refer to this fact here as showing the profundity of the questions raised by philosophy. In what follows we shall frankly follow the intellectualistic tradition that thought is in large measure equal to its task of comprehending the characteristics of reality and that reality has a categorical structure.

When I assert that the world is spatial, I am thinking affirmatively that my idea of space reveals the form of the world. However I have built up this idea—and it is the task of psychologist, mathematician and physicist working together or through the philosopher to throw light upon this question—I regard it as revelatory of the actual structure of the world.

In cosmology, we are concerned with the grand outline of the world rather than with its multitudinous detail. It is essential that we get before our minds and comprehend those basic, common features of objects and their relations which stand out as recurrent and significant. Is it not impossible to think of physical bodies without such traits as spatiality, diversity and mass being in mind? An object which had no shape, size or mass and was not assignable to some place would not be what we consider a physical thing. Thus, to repeat, it is equally right to say that the categories are fundamental features of thought and fundamental characteristics of things.

This view is distinct from Kant's. Kant was concerned with the question of the source and function of categories in our experience. They came from an impersonal Transcendental Ego and had no significance for the causes of our impressions. He was not a physical realist but a phenomenalist.

The history of human thought—whether in the race or in the individual—makes us aware that the categories first arose in an uncritical form. They are experiments in organization and interpretation growing out of the activities of the organism. At first, they are dominated by perceptual perspective and needs; and it is only gradually that they develop a more impersonal reference and axis. We shall note how a conceptual framework is constructed which brings out the relations of things to one another. There is no more striking feature of modern science than this system of objective measurements and references.

It is to this gradual and increasingly critical evolution of the categories of knowledge that I shall have occasion to call attention in my examination of space and time. But, of course, the final interest will be in the developed category as this reveals, more or less adequately, the characteristics of things. It will become clear that science and philosophy must cooperate to develop and employ the categories.

I do not doubt that, as we proceed, the value of systematic analysis of the categories will become evident. Nevertheless, the following excerpt from a discussion of just this question may be of value: "The most fundamental task of philosophy is to take the concepts that we daily use in common life and science, to analyze them, and thus to determine their precise meanings and their mutual relations. Evidently this is an important duty. In the first place, clear and accurate knowledge of anything is an advance on a mere hazy, general familiarity with it. Moreover, in the absence of clear knowledge of the meanings and relations of the concepts that we use, we are certain sooner or later to apply them wrongly or to

meet exceptional cases where we are puzzled as to how to apply them at all. For instance, we all agree pretty well as to the place of a certain pin which we are looking at. But suppose we go on to ask: 'Where is the image of that pin in a certain mirror; and is it in this place (wherever it may be) in precisely the same sense in which the pin itself is in *its* place?' We shall find the question a very puzzling one, and there will be no hope of answering it until we have carefully analyzed what we mean by being in a place."[1]

The Genesis of our Ideas of Space.—It has taken some time for the human mind to become aware that its idea of space has varied from period to period. We are, however, very conscious of this fact now. Three influences have chiefly been at work to arouse this consciousness: (1) psychological investigation of levels in our spatial experience; (2) the appearance of non-Euclidian geometries; and (3) the rise of the notion of relativity. A few words in regard to each of these influences will help us to gain perspective.

In the eighteenth century there arose the controversy between sensationalistic empiricism and intuitionalistic nativism. Hume may be regarded as representing the first theory of spatial experience while Descartes and Kant are the champions of nativism. As an opponent of nativism, Hume sought to reduce the experience of space to an arrangement of qualitative sensations. His work was taken up and continued by associational psychologists such as Mill and Spencer. The association of touch and movement sensations was supposed to generate the experience of extensity. In contrast to this effort, Descartes and Kant held space to be an intuition which dominated the qualitative sensations of color and pressure. Unfortunately, Kant did not sufficiently realize the fact that our perceptual experience of space is different from our conceptual experience. Not wishing to go into controversial matters in psychology, it will be sufficient for our purposes to point out that it is now generally recognized that even

[1] Broad, *Scientific Thought*, p. 16.

perceptual space has an immense range and variety of internal quality. "In the concrete," writes Professor James Ward, "the body is the origin or datum to which all positions are referred, and thus 'here' for the individual percipient is an absolute position, one that has no counterpart in the thoroughgoing relativity of pure space. Also 'the body-sense' in contrast with what may be called 'the projecting senses' (particularly the eye) yields the further absolute distinction of internal and external, marking off the bodily self from its environment. The environing space, again, for the percipient, varies in character, intimacy, and even in dimensions as perception recedes from the foreground towards the background, from objects to which we can adjust by changes of posture to objects only to be reached by locomotion. . . . It is a long way from these facts of perception, which the brutes share with us, to that scientific concept of space as having three dimensions and no qualitative differences, which we have elaborated by the aid of thought and language; and which reason may see to be the logical presupposition of what in the order of mental development has chronologically preceded it."[1]

The march of physiological and psychological knowledge has developed a position in regard to spatial experience which is far from sensationalistic empiricism, on the one hand, and intuitionalistic nativism, on the other. That there are *levels* of spatial experience is one of the things best agreed upon. Again, visual space is not quite the same as tactual-motor space. He who would have a thorough knowledge of space should study the details of the psychology of spatial perception. For our present purpose, however, it will be sufficient to contrast perceptual space with conceptual space and with the abstract space of geometry.

Man's visual perceptual space is suffused with tactual and motor meanings. It has, however, a peculiar perspective of its own. Let us now examine the specific characteristics of

[1] James Ward, *Psychological Principles*, p. 144-5.

perceptual space. It is, first of all, selective. Very distant things do not stand out as sharply or clearly as things nearer to the percipient. It is obvious that relationship to the percipient's sense-organs explains this characteristic. That stands out clearly which is near and attended to. In the second place, perceptual space is decidedly limited in extent. In front, there is the horizon; and, at the sides, there is increasing indistinctness until the field disappears. In the third place, perceptual space is filled with color and sound and with all those sensuous qualities which we tend to assign to things. Things have shape and size and position, and there is not as yet much sense, if any, of a separation between space and that which fills it.

The development of space-experience continues, and space becomes increasingly conceptual in character. A process of both synthesis and analysis goes on, and the sense of vastness and impersonal, objective relations grows upon the mind. It *thinks* now of a physical world which stretches out indefinitely in every direction and which engulfs any "here" with its personal perspective. It is at this level that science arises, and it soon reacts to further this conceptual development. Before long, space is thought of as a container or receptacle in which physical things exist or which they occupy. Empty space is distinguished from filled space, a distinction which has its origin in the interpretation of resistance to muscular effort. It is, of course, at this stage that danger arises, the danger of too hasty theory. Shall we separate space from things and make of it thus a new kind of reality?

This tendency to separation is encouraged by the construction of mathematical space. We have already seen how Descartes was led by his rationalism to geometrize the physical world and reduce it to mathematical space. Both science and philosophy have come to regard this procedure on his part as a grave error. The position we shall adopt and defend is that mathematical space is a construction made by the human mind working upon normal conceptual space under the guid-

ance of mathematical interests. We do not infer mathematical space in some mysterious way but create it out of conceptual space by abstraction and idealization. We disregard any aspect of the sensible world but its extension. It is direction, distance, position which we study. *And then we create such ideal elements as points, absolutely straight lines, surfaces, etc.* After this fashion, the human mind has constructed the concept of an empty space homogeneous in all directions and thinkable in terms of elements and relations such as those mentioned above. There can be little doubt that this process of abstractive construction has been aided by the fact that physical bodies change their relations without changing their forms. It is the form that counts. It is this *form* which mathematicians have studied so intensively. And their results have been in no sense arbitrary.

The second influence which we pointed out as affecting our idea of space was the development of non-Euclidian geometries. Descartes and Kant were, we saw, innatists. They believed that physical space, that is, the spatial character of the material world was of the Euclidian type. But the advance of both geometry and physics has made this hasty identification of mathematical space and physical space impossible. It was soon seen that mathematical space involved more than a passive intuition, that it involved assumptions. Now these assumptions were so naturally made that their existence and significance were not at first realized. But the development of two different systems of mathematical space by Riemann and Lobachewsky respectively drove home the problem: To which of these three possible types of space does the physical world correspond? There was seen to be no *a priori* certainty as to the spatial character of the world. Physics was seen to be in some sense other than mathematics. If these three systems are equally free from internal self-contradictions, they are equally meritorious candidates. Each is therefore an *hypothesis* which the facts must decide between; and these facts must be physical and not mathematical.

And this leads us to the third influence. The physical theories of relativity have been concerned with the problem of the measurement of physical distances and events. Now measurement is a physical operation, not a mathematical one. As a very able French philosopher has put it: "At the dawn of modern science the geometrization of experience meant the mathematician's right to dictate his orders to physics, and physics had to obey. To-day, on the contrary, the most subtle mathematics is at the service of the physicist, and he alone decides what is true or what is false, because he alone is in nature's councils. The problem of mathematical physics has definitely and radically changed its meaning: it no longer needs to impose the apodeictic form of geometry on the world, *but to adapt a certain type of geometry to the indications which the universe furnishes on its own account.*"[1]

As a consequence of the influence of psychology, mathematics and physics, our present ideas of space are pretty clear and critical. Let us now examine their implications.

Space as a Category of the Physical Sciences.—In our examinations of the traditional distinction between consciousness and the physical world, we saw that extension, or spatiality, is a fundamental characteristic of the physical world. So much was this the case, in fact, that it has long been customary to use it as a defining trait. The physical is spatial or that which occupies space. Since Descartes' time, it has been more or less assumed that consciousness cannot be in space. Whether that is a dogma we shall later determine, but, at present, we must try to find out what we should mean when we speak of the physical world as spatial. *What does space as a category of physical science mean?*

The study we have already made of the growth of our idea of space should prevent confusion. We are not now concerned with the mathematician's constructions of various types of spatial systems nor with empty, homogeneous space. Rather

[1] Leon Brunschvicg, "The Mathematical and the Physical," *Aristotelian Society Proceedings*, 1924, p. 45.

are we asking ourselves what is known about the physical world under the heading of space. The physical world is known as measurable and ordered in a side-by-side fashion. Thus the more we know about the structure and dynamic relations of the physical world, the more do we have content for physical space. To assert that nature is spatial does not mean that nature is *in* a semi-reality called space nor that abstract mathematical space is an attribute of the physical world but simply that our knowledge involves measurement in terms of real units, that things exclude one another and are ordered internally and externally. Such knowledge is preliminary and needs filling out, yet it is true so far as it goes. It is readily seen, however, that, far from making nature completely transparent, it only furnishes the framework for the continued investigations of the experimental sciences like physics, chemistry and biology.

This interpretation of space as a physical category concerned with what may well be called the *form* of nature should be contrasted with what may be called respectively the *essence view* and the *receptacle view.*

The essence view is the Cartesian identification of the physical world with space. Such a view holds the world to be intellectually transparent to the geometrician. It is clearly a deductive, analytic view of things which has little appreciation of induction and experimentation. The advance of science has undermined this outlook though it still lingers and fascinates the human mind. We must recognize the *correspondence* of mathematical space and physical space but refuse to admit any flat identity. And this correspondence rests upon the fact that mathematics has been built up by the human mind working upon certain features of our perceptual experience.

The receptacle view holds that real space is a sort of container for matter and energy. It is pretty obvious that such a view is only a step from the Cartesian outlook. There are two objections. In the first place, what is the nature of this

relation between the filling and the receptacle? The analogy of pail and water clearly will not hold, for this absolute space is not a world-pail made of something. In the second place, how could we know such an absolute space if only matter and energy affect our sense-organs? We would have to infer it from the form of things, and by what right?

The relativity view of space has come to the front and, aside from the special form it has taken with Einstein, it stands for the rejection of these older views. Space is a physical category connected with measurement. It is not a kind of entity by itself. The physical world is not so much *in* space as it is spatial. It is physics and astronomy that must give us the definite information about this basic characteristic of our world. Mathematics, alone, could never solve our problem; though it is equally true that, without mathematics, we would be intellectually helpless.

The Divisibility and Extent of Space.—There are certain problems which always present themselves in connection with space and time. These are the fascinating questions as to the infinite divisibility and infinite extent of these expanses. Our minds try to *imagine* vastnesses and become dizzy at the thoughts which are conjured up. We are all familiar with the popular methods of making infinite time concrete, and we have all thought in a bewildered fashion of the possibility of worlds beyond worlds without a limit. What has philosophy to say in regard to these puzzling enigmas?

Philosophy proceeds, first of all, to make distinctions. The first distinction is that between mathematical space and physical space. Let us note the bearing of this.

I see no reason why the philosopher should not agree with the mathematician who asserts that mathematical space is continuous and infinite. As is well-known, the mathematician thinks space in terms of the theory of numbers and makes certain assumptions in regard to the division of lines by points or positions. The result is a *conceptual scheme*. Such con-

ceptual schemes are valuable for the mathematician's work but they should not be naïvely read into nature itself. When a mathematician speaks of an infinite number of points being between any two positions on a line, he means that the bit of line-room is a continuum. In a continuum, there is no *next* position but always one between and so on indefinitely. Let us remember that a point is not a bit of space, that it does not have extension itself. What we have in mind, then, is a process of division in accord with arithmetical theory. The series one-half, one-fourth, one-eighth, *etc.*, never meets the series one-third, one-ninth, etc. *It is not the passive intuition of space which the mathematician desires but a series of operations in accordance with mathematical symbols and methods, a way of handling spatial objects conceptually.* It is this pragmatic view of mathematics which the student should try to bear in mind. Mathematics is a tool of analysis and construction. The following quotation from a mathematician who is also a good bit of a philosopher may bring this point out more clearly: "The fact that Mathematical methods are, in a very large class of cases, unable to deal with objects, or with processes, except by breaking them up into parts, and increasing indefinitely the number of those parts, is a significant example of a limitation imposed upon us by what appears to be a definite characteristic of our modes of apprehension. We appear to be unable to grasp some of the revelations of a whole, without breaking it up, as it were atomistically, and then proceeding to reconstruct the whole by a synthetic process which is confined to a continual approach to the whole along the path of an endless regress, which by its very nature, is such that the whole is never actually reached within the process, although a scrutiny of the laws of the regress may enable us to obtain a knowledge of the relations of the whole."[1]

Now it is clear that there is nothing to limit these conceptual processes or methods in either direction. Space as

[1] Hobson, *The Domain of Natural Science*, p. 121.

conceived by the mathematician is a continuum which can be divided or extended infinitely.

But is the physical world finite or infinite? That, as we have seen, is another question. We must now consider the information which physical science offers.

For a very long period this problem was treated dialectically, that is, in the light of *a priori* concepts. And since space was usually thought of as a receptacle in which matter existed and since mathematical concepts were not yet clearly analyzed, much confusion resulted. Kant may be said to represent a transition stage. He thinks of space and time as forms of the mind rather than as forms of reality; and he is interested in showing that we cannot take a realistic view without falling into contradiction. Thus he tries to prove both that the world is enclosed within spatial limits and that it is infinite in regard to space. We cannot in the small space we have at our disposal go into the details but an examination of one of Kant's arguments is desirable. He seeks to prove that the world is infinite by disproof of its contradictory, that the world is finite. If the world were finite, he argues, it would exist in an empty space without limits. We should therefore have not only a relation of things in space but also a relation of things to space. But such a relation would be a relation to no object and therefore it is nothing. Hence the world is not limited with regard to space, that is, it is infinite in extension. But this conclusion seems a bit of dialectic of the worst sort. Why must the physical world be infinite because it is not limited externally by space? Our consideration of space as a physical category has shown us that the characteristics of the world must be discovered in an empirical way. The world is either finite or infinite. Which is it? Have we as yet any way of deciding between the alternatives?

There has been much discussion of the matter but, as yet, it is generally admitted that our data are insufficient. The pendulum seems to swing back and forth between the two

positions. The relativists, on the whole, believe that physical space is Riemannian in type and that the universe is like a finite sphere of this kind warped by gravitational tensions. Many astronomers are loath to accept a finite universe but postulate some infinite system of stellar arrangements. I do not see that philosophy has any means of deciding between these theories. The movement of science will, alone, decide. But a few words in regard to basic concepts may be worth while.

We must not think too pictorially in these matters. Even if, genetically, empty space meant that which does not offer resistance to movement, it does not mean that for science. Science simply recognizes that chemical matter is not homogeneously distributed in the physical world. There are condensed bodies and there is the vast region between these condensed bodies. That there is something in these regions more primitive, perhaps, than chemical matter is suspected at present, something which may be called energy or unorganized matter. The point is that we should not feed ourselves with such terms as empty space or the void. *These are negative terms, not positive terms.* It is probable that the physical world is dynamically continuous in some fashion. Again, latest physical speculations should warn us against thinking of the universe like a ball or an orange in relation to which we have the habit of reaching or stepping beyond. In this regard, perhaps, we are somewhat in the position of the contemporaries of Columbus who worried about the danger confronting the inhabitants of the antipodes of falling off the earth. We must develop a trained imagination in these matters and remember that the whole may not be exactly like the part.

We have not said anything about physical divisibility. Here again, we are in the realm of physics rather than of pure mathematics. There are, undoubtedly, units in nature corresponding to the atoms of modern science and to the electrons. We must not *picture* these too much in terms

of molar bodies with apparently hard and fast outlines. That was the mistake of the older mechanical view with its billiard-ball atoms. In some sense the physical world is both differentiated, or discrete, and a dynamic continuum. It seems quite clear to me that the distinction between mathematical space and physical space will assist our thinking in these matters. Some questions bearing upon this point will arise as we later consider organic and chemical integration.

Implications for Philosophy.—The influence of the Cartesian view has been so pervasive that it will be worth our while to point out just what the implications of our own realistic view are. In the first place, we do not begin with an *a priori idea* of a material substance. We simply say that there is a physical world and then try to find out what is known about it. To assert that the essence of material substance is extension meant for the rationalist that the mind grasped nature in a sort of transparent way in this concept. We, on the contrary, believe that the physical world has a spatial form or characteristics but that it has many other characteristics, all of which must be duly discovered by investigation. *Spatial form does not exhaust a material object any more than mass exhausts it.* My body has a spatial form and a definite mass, and so does this desk; but that does not mean that my organism has only the properties of the desk. Thus our realism has a more empirical tinge. We must find out by hard work just what kind of a physical world we have in all its differentiations and levels.

In the second place, we do not begin with the assumption that there are two kinds of substances, as Descartes did. That thinking goes on in the world is quite undeniable since we all think. But we will not begin with antithetical essences of substances. It may easily be that an extended thing is also a thinking thing. Why not? Here, again, we are confronted by a question which must be answered empirically by investigation. Can the operations of thinking and the individual's stream of experiencing be assigned to the organism? It is

this question which will become crucial when we seek to integrate the results of biology and psychology. It is the mind-body problem as it is presenting itself to-day. The point is, that we have no right dialectically to begin with a dualism; and that the acceptance of space as a physical category does not involve it. Let us first of all find out what we can know about the physical world in its various parts and levels.

Some Remarks upon Number and Measurement.—The development of the idea of number rested upon our human capacity to perceive and think of objects. So long as we single out some complex in our field of attention and treat it as a practical unit, we have *one* thing to deal with. But we can also distinguish instances of two, three or more things. This capacity to distinguish things which somehow act in a unified way and to which we can return again and again is quite basic for our thought of the world. It is clear that nature meets the human mind half-way and that the idea of number reflects the extensity and diversity of our environment. Thus I can distinguish and count nine books on my desk at the present moment.

Let us now very briefly examine such ideas as *unity, plurality, an aggregate, order* and *correspondence* which are characteristic of this first general survey of objects. It is probably to the act of attention that we must appeal for the explanation of the sense of unity. Attention is, however, assisted by the behavior and character of the object attended to. Certain objects tend quickly to stand out from their background and attract attention. Into the details of this problem we cannot here enter for lack of time. It is desirable to note, however, that any kind of an object arouses this sense of unity. It is a sort of formal feature common to all objects.

A plurality of objects is called an *aggregate.* An aggregate is a whole which is made up of units. The component objects may differ widely in every physical feature such as size and weight and color and yet be equally units of the

aggregate. Their unit-character is thus purely formal or logical.

An aggregate becomes an *ordered aggregate* as soon as the idea of order is introduced. Counting is a usual method of introducing order. We then have first, second, third, etc.; and this way of ranking objects in an aggregate gives us the ordinal numbers. But other ways of ordering the units are often used. They may be ranked by size or weight. When we have in mind the *degree of plurality* of an aggregate, we have the cardinal numbers. Thus one aggregate is three and another four. And we can also take a part or a section of an aggregate and correlate with it a certain number to express its plurality.

Another operation which is important is that of *correspondence*. Two aggregates are thought of as corresponding when a unit in one is related by our thought to a unit in the other and so on. Tallying is a good practical instance of correspondence. A notch stands for one thing in another aggregate.

Arithmetic is the science which results from the logical development of this formal way of thinking objects. Operations, such as addition and abstraction, and symbols, such as the Arabic notation, have increased the reach of arithmetic. But, at present, we are more concerned with the physical sciences because we are stressing certain cosmological questions. It is, then, through the application of arithmetic and mathematics generally to the operations of *measurement* that the exact sciences take on their familiar mathematical form. What, then is measurement?

Measurement is the technical operation of determining any quantitative characteristic of an object in terms of an appropriate unit. The result is always a ratio and consists of two elements, the numerical part and the name of the unit. It is because there is this numerical part that mathematics is an essential ingredient of the exact sciences. It is really quite necessary to appreciate the kind of knowledge thus

acquired if there is to be an adequate comprehension of the nature of scientific knowledge. It is clearly knowledge about this desk to know that it is five feet long and four feet wide; and yet it is not the intuitional sort of knowledge which perception at first leads us to expect, for how long is a foot or a yard? Do we intuit the absolute size of our unit in terms of which we give the size of measured objects?

In physics we have the fundamental units and the derived units. Length, mass and time are the fundamental units and such things as area, volume, force, velocity are derived units. The laws of the exact sciences are expressed as relations between quantities achieved in this manner. It is this kind of knowledge in which operations of a technical sort are guided by sense-data and interpreted by the mind that much of science achieves. So far as possible, science attempts to make physical things speak in terms of one another wherever quantitative characteristics can be discovered. And ours is clearly a numerable and quantitative world. The philosophical significance of this discovery will become clearer as we proceed.

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CHAPTER XVII

TIME, CHANGE AND CONSERVATION

Ours Not an Inert, or Static, World.—That ours is a world in which changes are always occurring seems to common sense the most obvious and undeniable of facts. Each individual is born, grows, in the usual course of events, to manhood or womanhood, plays a brief part on the world's stage, and dies. Everywhere is change, change of position, growth, decay, alteration of color, size, structure, behavior. The Ancients recognized this feature of earthly things, but believed that the heavens at least were changeless. But the penetrative growth of knowledge has disclosed change everywhere. Worlds grow old and lose their radiant energy. Nowhere can we find that which is protected from the teeth of time.

On the other hand, our world is not a mere flux, a mere welter of alteration. *Even in change there is order.* There are laws of change, recurrence of pattern, conservation of matter and energy. There is continuance as well as occurrence; things as well as events.

The recognition of the presence of both of these traits in the world has led to much puzzling on the part of the human mind. Strange as it may seem at first, the tendency has been to reject one of them for the sake of the other. Very early in the history of philosophy, there arose a division of opinion between those thinkers who held nature to be a process and those who maintained that change is illusory. We may speak of the first group as *temporalists.* The other group may be called the *Eleatics* after an ancient school of thinkers which

denied the reality of change. This controversy has lasted until our own day.

Although we shall be examining this question from the point of view of physical realism, it may not be amiss to point out that the older school of spiritualists, called the absolutists, denied the reality of change. Change is appearance. It is a self-contradictory category. In the Absolute, which transcends and includes the finite beings which we are, there is neither desire nor shadow of turning. We shall have comparatively little to say of this criticism of time because we have not the space at our disposal to go into the arguments upon which it is based. We must content ourselves with pointing out that a very large number of philosophers—especially those trained in mathematics—are unconvinced of the cogency of these arguments against time and that many spiritualists—especially those of the pluralistic or personalistic persuasion—are temporalists. In fact, temporalism has been waxing in influence of late. Moreover, we are primarily concerned at present with the categories of science of which time is surely a most important one.

It will be our purpose in the present chapter to examine those large, general questions which are inseparable from time as a concept. There are many of them, and tremendously fascinating ones. To get a clear grasp of principles at this point will save us much bewilderment later. We cannot avoid being somewhat technical in places, but we shall limit our technicalities as much as possible. We shall begin with an examination of time as an *experience* and proceed as quickly as we are able to an examination of time as a *category*, or basic concept, of our knowledge of *events*.

Perhaps the formulation of a few questions might furnish a stimulating introduction to what follows. They might show how unavoidable the enquiry into the nature of time is. The following may serve this purpose: Is a thing which changes still the same thing? How are events related to things? Is time a receptacle in which events occur? Or is

time but another word for the relations and overlapping of events? Did the physical universe have a beginning in time? Or is time meaningless apart from a world of events?

The Genesis of our Ideas of Time.—It will be advisable to follow the same method we used in our study of space. All concepts are based upon experiences. We pass from the vague and implicit to the defined and explicit. Our idea of time is complex, and it is necessary to distinguish the various meanings of time as well as to acknowledge the common elements. We can trace the clarification of time as a category as we pass successively from perception to conception and thence from mathematical distinctions to time as a category of scientific knowledge. It is a well known fact that the advance of science has led to the interweaving of time and space in our knowledge of events. In the terminology of modern thought, nature is a four-dimensional continuum with time as the fourth dimension. What is the basis for all this in our experience? Let us begin with a study of the distinctions characteristic of our perceptual experience.

The elementary experience which is at the foundation of what we roughly call time is the sense of ordered change. When we listen to a factory whistle, we note its rise and fall, its variation in intensity, its increase or decrease in shrillness. Such awareness of ordered change in ourselves and our surroundings is a constant experience. In their search for the basic experience out of which temporal distinctions have developed, psychologists have been led to stress what is called the "specious present." In the specious present we have a complex of presentations which are at once simultaneous and successive, that is, we have a *time-perspective.* There is that which occupies the focus of attention, that which is retreating or dying out, and that which is coming. Our experience is a directed stream or process.

It is important that we get clearly in mind this basic temporal experience in order that we may contrast it with the more abstract time of conception which neglects the concrete

filling of personal time. Perhaps we can best do this by the aid of a quotation from James: "In short, the practically cognized present is no knife-edge but a saddle-back, with a certain breadth of its own on which we sit perched, and from which we look in two directions into time. The unit of composition of our perception of time is a *duration,* with a bow and a stern, as it were—a rearward and a forward-looking end. It is only as parts of this *duration-block* that the relation of succession of one end to the other is perceived . . . The experience is from the outset a synthetic datum, not a simple one; and to sensible perception its members are inseparable, although attention looking back may easily decompose the experience, and distinguish its beginning from its end."[1] Perceptual experience knows nothing of mathematical instants.

Personal time is raised to a higher level by the addition of memory and expectation. The stability and scope of our time-meanings—the past, the present and the future—depend upon the supplementation of the specious present by a wider range of events which continues it in both directions. We are thus lifted into a wider temporal perspective. The mind outstrips what can be given in perception proper and can swing from a remote past to the possible future through an *ordered series of events.* Consciousness is not in time but temporal. In other words, time becomes ever more clearly the *form* of our experience and of our thought.

Perceptual time with its personal perspective and its "now" corresponding to the bodily "here" of perceptual space shades genetically into common or socially standardized time. We should note the gradual infusion of a spatial framework and of a method of measuring duration or time-lapse. Yet we must not jump to the conclusion that social intercourse is alone responsible for these additions. The need is there from the beginning. Felt estimations of duration are too dependent upon subjective or bodily factors, such as

[1] James, *Principles of Psychology,* Vol. 1, p. 609.

hope, fear, hunger, to be trustworthy. A wider perspective and more objective foundation is required. And men help each other to secure this more adequate perspective. The group finds it natural to resort to orderly changes in perceived objects, the movement of the sun across the heavens, the slow burning of the candle, the sifting of the sand through the hour-glass. It is in the attempt to get beyond the purely personal basis of time-estimation that resort is had to changes which have a temporal order and harmonize with the sense of duration.

Thus time gradually got its cues and standards from the external world. The result was a commonly accepted chronology. Between this measured duration and felt duration there is often a conflict. "Shakespeare tells us that time travels 'in divers paces with divers persons'; Newton tells us that time moves at a constant rate. Shakespeare's time is evidently subjective time, and Newton's objective time."[1] So by degrees time becomes a measured duration of events. In so becoming, it arrives at the level where it is a category of physical science. As nature is a realm of *events* which are simultaneous, successive and overlapping, time deals with ordered and precise knowledge of this undeniable characteristic of nature. It takes its place beside space as an irreducible element in our knowledge of nature.

Common time easily links itself with mathematical space to become mathematical time, infinitely divisible into moments and infinite in extent. Let us observe how this transformation occurs. The old English thinker, Thomas Hobbes, expressed the transfer so clearly and yet so naïvely that I cannot do better than quote his words: "As a body leaves a phantasm of its magnitude in the mind, so also a moved body leaves a phantasm of its motion, namely, an idea of that body passing out of one space into another by continual succession. And this idea, or phantasm, is that which I call time. And yet when I say that time is a phantasm of motion, I do not

[1] Stout, *Manual of Psychology*, p. 498.

say this is sufficient to define it by; for this word time comprehends the notion of a body inasmuch as it is first here and then there. Wherefore a complete definition of time is such as this, time is the phantasm of before and after in motion." Movements are best represented symbolically by a line with a direction ———→; in such a symbol there is contained the idea of an order as well as a quantity. The line symbolizes both duration and succession. Thus a portion of linear space, so interpreted, measures duration, while positions on it, apprehended together and yet thought as successive, represent temporal order.

As in the case of mathematical space, we must avoid two extremes. Personal time is inseparable from the concrete filling of experience. Order and duration are characteristics of the stream of our life. To be so dominated by the abstract form of time as to forget this is one mistake. We may then seek to find moments of a mathematical sort in our experience or underlying it; whereas we can only find events or changes. The other extreme is to forget that objective time grows up with measurement and to make it a mere construction without objective significance. Mathematical time must not be reified any more than mathematical space. We must not think of an absolute external time out there which events occupy in some mysterious fashion. *There is no such empty, infinite, homogeneous receptacle. On the other hand, events have a natural order and a measurable duration.*

Time as a Category of Scientific Knowledge.—We can now push forward to the investigation of the significance of time as a category. Upon what characteristic of nature does it bear? What is the nature of the knowledge it mediates? We shall again see that knowledge is *a gradual comprehension of the form of nature.* It is only by a great effort and with the development of a subtle technique that human thought grasps comparative information about events.

Nature is a realm of events or changes as well as a realm of things which have magnitude and are in the order of side-

by-sideness. Our knowledge is in both cases directed to an objective realm and reflects the characteristics of that realm. And in both cases, measurement is the operation which makes possible the refinement of this knowledge. What kind of knowledge can this measurement give us as regards the temporal characteristic of nature?

The general character of temporal measurement is so well known that we need not linger upon it. Some process of a recurrent and uniform sort is taken as the measuring rod and other processes are referred to some unit of it. If two processes begin and end together, they are said to occupy the same time. We should speak of them as having the same duration if we wish to avoid misleading ideas. Let us take an example to make this correspondence clearer. Suppose that we wish to know how long a certain chemical process takes to occur. We note the positions on the hands of a clock at the moment the chemicals are put together and again when the reaction ceases or comes to an equilibrium. This method means that we seek to establish a quantitative correspondence. This correspondence, which is at the basis of the scientific measurement of the temporal characteristic of nature, is for temporal knowledge what superposition of things is for spatial knowledge. In both cases, we obtain knowledge in terms of *ratios* and not in terms of intuitions of absolute dimensions. Science selects some uniform process as a standard, like the rotation of the earth, and adheres to it so long as it is convinced that this process is uniform. The delicacy of such determinations is remarkable. "Thus astronomers have come to the conclusion that the earth as a clock is losing at the rate of 8.3 seconds per century and they have given up the earth as their time-keeper and substituted for the sidereal time t a certain function $T = \phi(t)$, slightly differing from t, as their new kinetic time."[1]

But while scientific time concerns itself with the measurement of various processes in nature by reference to a stand

[1] Silberstein, *The Theory of Relativity*, ch. 1.

ard process, it retains the idea of order which is characteristic of personal time. And it is this order which differentiates it from space. We can conceive of the physical world as inert and changeless, and for such a world time would have no meaning. But the actual physical world is different. It is dynamic and replete with change. How fundamental these changes are, and how they are related to the conservation side of nature is one of the deepest of problems. Life and mind are instances of this penetrative advent of change. Something describable as *creative synthesis* appears to be a characteristic of our world under favorable conditions.

Science relates events cognitively by means of a chronology. It is knowledge about nature that an eclipse occurred in the sixth century B. C. It is also knowledge that Columbus discovered America in 1492. Such knowledge is obviously about what no longer exists but it is knowledge, nevertheless, a fact which shows that scientific knowledge is not an apprehension but a valid judgment. Is not knowledge about the past a knowing which relates events cognitively *in the order in which they occurred?* Thus the content of knowledge corresponds to the relations in which events are born. But what ceases in nature is often retained in the mind or inferred. The situation can be indicated as follows:

Nature	eeeeeeeeEEE →	Past events, Present events
Knowledge	PPPPPPPP'P'P' FFFF →	Past, Present, Future

In nature we have only the present processes of change or events which may overlap in various ways. These are to be contrasted with past events or processes whose course has been run and whose effects alone may remain, as is exemplified in geology and archæology. In knowledge, past events are *cognitively retained* and related to present and possible future events. The order of arrangement in knowledge corresponds to the order of occurrence in nature.

Change, or Events, the Characteristic of Nature Known in Terms of Time.—But what is in the temporal order in

nature? The answer we have already clearly suggested is change, events or processes, essentially synonymous terms. It is these events or processes which science studies and tries to get information about. Events are *local* and may be exactly simultaneous with other events, or overlap them, or occur within them, etc. Here, again, we may say that physics dictates to applied mathematics rather than the reverse. Science seeks to measure events and determine their laws or temporal structure. We must relinquish a receptacle view of time just as we must relinquish a receptacle view of space.

We have already pointed out that it is only man with his memory who connects the past with the present in a scheme analogous to the specious present; that is, he plots events in a diagram in which coexistence is combined with the order of succession. Thus the scientist furnishes us with knowledge about a moving body by describing the path traversed and giving the time-rate of the motion. But the moving body does not carry its path with it. Only man with his memory is able to connect a past position with a later position; the moving body has no such coordinating capacity. Thus we see that knowledge about motion is not the same as the actual motion and yet is true knowledge. We must say, then, that in nature there are local events which have a duration, and that these durations include or exclude one another for our measurement and temporal localization. Thus they possess relations which are grasped by man and plotted in his thought in terms of past, present and future and a temporal frame of reference. The present of nature is the processes which are occurring. *Instead of nature being in time, time, that is, events or changes, is in nature.* We must think nature in four dimensions and thus bring physical space and physical time together. Nature is a stereometrical, more or less organic, domain differentiated into parts in which processes or events of different types are constantly occurring.

Time and the Cosmos.—The human mind has always been fascinated by the idea of absolute beginnings and absolute

endings. Organic life first attracted attention, and this, of course, is subject to origin and death. It is not surprising that this way of approach was applied to the earth and the heavens. They, also, must have had a beginning and will have an ending. Many of these cosmogonies have come down to us and are extremely interesting because they show how the human mind works and what material it ordinarily has to work with. None of them really begins with an absolute beginning, so to speak. There is an aboriginal chaos which is then ordered by a fiat of a god, or there is a world-egg, or the earth and sky are themselves deities. Creation myths are of many forms, but in every case the material with which the human mind has worked is concrete. It has thought in terms of growth and procreation and magical power. *It is clear that the human mind has never thought in terms of absolute beginnings.* There was always something to begin with. And our analysis of time as an order of events shows that the human mind has been right. Without events there is no time. Recall our refusal to identify abstract, empty, homogeneous mathematical time with physical time. This refusal was quite of a piece with the denial that mathematical space is identical with physical space. Physical space and time are characteristics of the physical world.

While developed religions have usually tried to think the world as a creation of a spiritual power and so subject to it, science has simply attempted to understand the spatial and temporal order of the world. Science knows nothing of absolute origins. It tries to explain one state of the solar system, for instance, by reference to preceding conditions and the laws of physical change. And the solar system is a very small part of the sidereal universe. It is held, for example that stars pass through certain changes, that, from the standpoint of energy-content they reach a maximum and then grow old and die. Our own sun is a yellow dwarf which will some time become dull red and, perhaps, even cold and dark. Just as, on this earth, human beings are to be found in all

stages of development from infancy to old age, so it is among the denizens of space. The universe is not a linear process but a complex, spatio-temporal one. Cosmical theories are as yet very speculative because astro-physics is not very far advanced. Very little is known for certain of conditions within nebulas. There are many different kinds of nebulas, recent evidence has shown that some may be millions of light-years away and outside our own sidereal system. The universe is an empirical expanse which must be studied.

Is there any good reason to hold that the physical universe is a contingent, dependent kind of being, that it does not, as it were, exist by itself and in its own right? Is there any good reason to assume a First Cause beyond the universe which produced it and even sustains it? Many have made this assumption, but there seems to be nothing back of it but the bias in favor of a creation, a bias which rests upon a primitive view of the world. According to our own analysis of time—an analysis which is widely held to-day—an infinite regress is quite thinkable. Every event had its antecedent. We have here an *order* in terms of which we think the events which occur in the universe. Why should we want a first event? Of course if we try to imagine these things rather than to think them our imagination soon gets tired. I conclude that there is no good reason to think of the physical universe as contingent, or dependent, being as the scholastics and theologians have judged it to be. *The ultimate puzzle is not a temporal one but just the fact that anything is.* But since we do have experiences and do know a world, we are compelled to acknowledge this fact of existence. It is the task of the understanding to grasp the characteristics of what is; and, in default of a guaranteed revelation, that is, a revelation which satisfies reason of its authenticity, the best we can do is to investigate the universe by means of science and philosophy.

The companion problem, Is the physical universe eternal? can be dismissed in a few words since it is on all fours with

the first. The empirical data are entirely in favor of conservation as a characteristic of the energy-content of reality. Some philosophers have argued that conservation is an *a priori* principle bound up with the very idea of causality. This is more than doubtful. Conservation is a discovery erected into a principle. It is, however, speculatively very attractive. It suggests that reality does not use itself up but is eternally fresh. It is upon this basic characteristic of reality that our idea of eternity should be grounded. Mathematically, eternity can be symbolized by the number-series which is theoretically inexhaustible.

Concluding Remarks.—In the introductory section of this chapter, we formulated a few typical questions as a method of showing the reality and interest of the problems connected with time. Some of these questions we have already answered. Thus we have tried to prove that time is not a receptacle but an order of events or changes, and that it is therefore rather meaningless to ask whether the physical universe had a beginning *in* time. But there are other questions which remain about which we should say a few words.

Is a thing which changes still the *same* thing? A little reflection shows us, I think, that we have here largely the equivocalness of the term, same. A thing cannot change and not be different in this feature or that, in its size, color, shape, chemical constitution, properties. But while it is different in some of its characteristics, it is yet the same thing. What do we mean by same in the second case? *Surely that we believe that there is a continuity of substance and history which justifies a common reference.* It is the same object of our thought and the same persistent thing which has changed. In logical terms, we speak of the same subject of judgment to which we at different times for sufficient reason can rightly assign contradictory attributes. Socrates is bald, but the same Socrates was at one time not bald. We conclude that a thing permits change, and that there is therefore no

contradiction in a thing which changes and is yet the same thing.

How are events related to things? Events seem to be changes in things, and the relation is an intrinsic one. It refers to some alteration in constitution and properties of the thing so that it is different from what it was. Sometimes the chief conditions of this alteration are external to the thing, sometimes internal. Involuntary attention in animals or change of shape due to pressure would be instances of the first, while voluntary attention and locomotion would be instances of the second. We shall have something more to say of this difference when we come to consider life and mind.

Modern science has been becoming much more philosophical and analytic in its outlook upon all these matters. Thus it is well known that the relativity theory asserts that events and time are always *local*. The old, absolute time has been rejected. On the face of it, it is obvious that this change of outlook is in line with the analysis which philosophy offers.

In an introductory text we cannot go into the question of relativity to the extent that the subject deserves. A survey like this can only discuss the main principles of cosmology, and the subjects are so numerous that much that is important must be omitted. The hope that the writer has is that a foundation for further investigation will be achieved and that along with it a genuine interest will be aroused that will lead the student into advanced work.

We have seen that space and time are two basic kinds of order which are studied in their detailed and specific *patterns* by science in terms of the results of measurement. It has been found that the measurement of space, when systems in motion with respect to each other are concerned, requires a reference to time. Hence the physicist speaks of the space-time manifold or continuum. To locate an event accurately requires four dimensions, three spatial and one temporal.

It was not out of the pressure of our ordinary experience that the theories of relativity arose but out of conflicts and

difficulties in physics. Perhaps the difficulties in the older theories came to the front most clearly in the Michelson-Morley experiment. The purpose of this experiment was to compare the times taken by a beam of light in passing from one point to another and back again in two cases; in the one, the direction was that of the earth's motion in its orbit, in the other, the direction was perpendicular to the first. The experimenters expected a decided difference and found none. It was to account for this fact that Einstein analyzed the general assumptions underlying classical mechanics.

The controversy is still on in physics. On the whole, the relativity theory in both its special and its general form seems assured of some measure of acceptance. Whether it will be modified by other discoveries in electro-magnetics is uncertain but possible. The field under discussion is very complex and technical. Deductions are made from mathematical formulas, and it is then the question whether observations will verify them. It is admitted that the deductions drawn by Einstein have been verified in three cases, the bending of light near the sun as noted in photographs taken during an eclipse, the orbit of Mercury, and the calculated masses and motions of electrons in their atomic orbits.

The part played by light in measurements of the sort stressed in relativity should be noted. The constant velocity of light for all observers, no matter what the source of emission of light or the motion of that source, is a basic assumption. It is then shown that events which seem simultaneous to one observer will not seem so to another observer in motion with reference to that observer. Thus for different *measurement-systems* the same events may be simultaneous and successive. The inference is that simultaneity and succession are not intrinsic, fixed, objective time-relations but rather *datings* relative to the measurer. At least, this is the inference in the special relativity theory. Each measurer works out his time order.

It is obvious that there is nothing in this schema which

conflicts with our own analysis. For us, real time is change, or the actual local events, and there is no good reason to assume an absolute time distinct from the events. And it is not surprising to find that any ordering of these events with reference to one another requires certain conditions of which the position and motion of the observer is an important one. *Events do not carry their date with them.* And yet are we not haunted all the time with a feeling that local events do happen in total disregard of light transmission and relative motions of estimators? They happen in an objective spatial system. Do we not feel that a cause-and-effect relation is always local and spatially mediated and that dating cannot make the effect the cause? I would suggest that we have here the old question of the distinction between knowledge and its objects on which critical realism puts so much stress. The form of knowledge is not necessarily simply equivalent to the object known. There are complications and standards in knowledge which do not exist for the object. Thus our physical knowledge is always in terms of *ratios,* but these ratios do not literally exist in the object. When I say that a table is five feet long, this statement is true, but it means that I can superpose a measure on the table five times.

A similar question is raised by the special relativity theory in regard to the size of an object. It is shown that the same object is estimated differently when it is at rest with regard to the observer and when it is moving with approximately the speed of light. Has it, then, a real length? Why not? We must not confuse the object with our knowledge of it. Our knowledge has conditions which we must know enough about to take into account. In this case, the question would seem to be under which conditions do we have more adequate knowledge of the real size of the object. I am inclined to stress the situation in which we are in one motion system with the object and can actually superpose a standard on it. But even here we have only a ratio.

The first writings of Einstein dealt with the special rela-

tivity theory, and the philosophy in terms of which he was inclined to interpret it was phenomenalistic, almost Kantian. Many philosophers and even scientists like Eddington have followed this lead and regard relativity as a movement in favor of idealism. The general relativity theory is more realistic in its trend. The philosophical controversy is not over, but second thought is bringing out the realistic implications of relativity. It is a theory of measurement primarily. And the main point is that it tries to understand the complex nature and conditions of measurement in cases of velocities of a high order.

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CHAPTER XVIII

MATTER, ENERGY, THINGS, AND PROPERTIES

What is Matter?—In the chapter dealing with traditional, metaphysical monisms we examined the vague, general theories to which the belief in matter gave rise. We there decided that more analysis was needed before these theories could be well formulated. We wanted to know more about matter and energy and mind and consciousness and evolution. The assertions of materialism and the counter-assertions of spiritualism seemed too unanalytic to be satisfactory. Perhaps, we suggested, if we united our epistemology with an exploration of the cosmology being disclosed by scientific research we would get light on these ontological questions. In the two preceding chapters we have studied the spatial and temporal order which seems characteristic of nature; let us now examine the 'filling' of this order.

We can distinguish two stages in the theory of matter, the speculative and the experimental. I do not mean that these two stages can, or should be, sharply opposed. But it is, nevertheless, true that for a long time thought did not have adequate data for reflection. It is only recently that physics has been enabled to penetrate to those minute particles and their arrangement which apparently form the stuff of matter.

It is very well known that the Greeks tried to conceive a stuff in nature in terms of which they could account for the visible and tangible world of things. Such an attempt was epoch-making because it involved a complete break with mythology and its explanations in terms of spirits and gods. This new departure reached its climax in the Ancient World in the theory of Democritus, which was a form of mechanical

atomism. It will be remembered that we discussed his theory in some detail in connection with materialism. Aristotle, also, developed a very influential theory which was anti-mechanical and distinguished between form and matter, form being directive and matter a potential stuff.

But it remained for experimental work in chemistry and in physics to give us information of a more penetrative sort than the keenest speculation without this method could achieve. John Dalton (1766-1844) connected atomism with chemistry and advanced the idea of combining numbers. It is now believed that there are some ninety odd chemical elements of which the hydrogen atom is the simplest. These atoms are made of the same stuff, which is electrical in nature, and differ in complexity and in the properties which go with complexity. Not so very long ago, an atom was conceived literally as indivisible, a sort of intrinsically hard and solid ball of stuff. It is now thought of as an energy-system with a definite structure. The properties of things are regarded as functions of the combination and aggregation of these minute systems. It was the logical pressure of facts discovered in connection with radio-activity and with the use of the Crookes tube that led to this set of judgments about matter.

The results of these investigations are most fascinating. The calculations in regard to the number of atoms in a cubic centimeter of gas are astonishing. Thus it is said that there are 54,000,000,000,000,000,000 atoms in such a volume. But while all this is interesting and important in its own place, the task of philosophy only begins where such concrete data leave off. How shall we conceive these electrons and protons? What is the reach of our knowledge in regard to them?

One way of answering the question is to point out that we can know them only through data in our experience which is relevant to them. Science knows something of their size and sphere of influence and knows that they affect one another and behave in relation to one another. Some of the numerical laws of electronic mechanics are thus being worked out.

Another way of putting the same thing is to say that we know how electricity behaves and have reason to believe that it is partially granular in character. Let us bring to bear upon this knowledge the implications of epistemology. We decided that knowledge is not an intuition of the stuff of the object perceived or thought of. Rather are some characteristics of the object revealed by data. Comparative sizes, relations, structure, behavior are just the characteristics which are fitted to reveal themselves and which science always brings out most clearly in its information. But the mechanism for a veritable glance at the very stuff of the world seems precluded. Patterns and quantities alone can be deciphered. Why? Because we are in knowing external to the things known.

It is quite possible that electrons are complex entities, although no indication of complexity has yet been discovered. It is possible that they are based on something more ultimate, like ether. Science does not yet know, nor does it even have data relevant to such an hypothesis. Let us frankly admit that philosophy can be of no assistance here. It is data alone that count. Once we are realists, we are modest in our attitude toward nature and its possibilities. What we as philosophers try to do is to think the situation through as regards the categories involved and their relation to our human knowledge. Once grant atoms and electrons as real entities, and problems enough arise in the philosophy of nature, as we shall see when we come to consider life and mind.

We must not neglect to call attention to one implication of all this new knowledge. Matter is an *evolved system* rather than a primal material. It is electricity, perhaps, which is the primal material. But if matter is a name for a stage of physical evolution, may there not be higher stages of evolution, more complex systems with new properties? A chemical substance would be such a new level, and so might an organism be. This suggestion, which we shall try to follow out in the later chapters, gives a new perspective to materialism. In some sense an integrated thing is more than,

or other than, the elements into which it can be disintegrated. We have here the whole question of growth, of becoming, which the older materialism disregarded because it was dominated by atomic mechanicalism. This much in the way of suggestion.

Ether we will leave to one side because so little is known of it and its functions. Some physicists even doubt whether it is a necessary hypothesis for physics. It has stood for *continuity* between things and for a *medium* in which energy processes occur as in the transmission of light and heat. If we pay attention to our ordinary views of location, it certainly seems to follow from the data of science that atoms and molecules are mainly void. An atom is compared with a solar system, and we know how little of the volume of the solar system is taken up by the sun and the planets. How, then, are they bound together? Is each a center of electromagnetic tension which needs no medium? Or is a medium of connection necessary? These are ultimate questions which science has not answered and which philosophy has no data of its own to answer by.

Besides ether and electricity, one other term is basic in modern science and that is *energy*. What does science mean by energy, and what is its significance for the philosopher?

Not many years ago a school of scientists arose which regarded energy as the basic, unifying term for physics and chemistry. This position is called *energism*. It was a reaction against the older atomism. Certain thinkers went so far as to make energism a rival of materialism and to assert that consciousness and life are *forms* of energy. After our discussion of materialism, we realize that such a blanket statement by itself is not very meaningful. Just what is energy, and how does one form of energy differ from another? Just what happens when chemical energy is *transformed* into vital energy, and vital energy into consciousness? There is a double problem here. What is energy *in itself?* And what is the nature of these transformations?

Energy is ordinarily defined by the scientist as the capacity for doing work. This capacity is a measurable quantity when work is done and energy is actual. In contrast to work we have *equilibrium*, and we speak of a system's potentialities as potential energy. The term energy, then, seems to refer to a measurable character of processes of all sorts, mechanical, chemical, electrical, physiological, etc. The kind of energy is relative to the kind of process which is involved. In each case a different unit is taken, though these units are equatable.

It seems best to keep energy as a term for work done, or capable of being done, by a system rather than as a term for a kind of stuff. It appears that work is done in *quanta* or discrete quantities. Just what changes correspond to these quanta it is hard to say. Mr. Russell speaks of them as atoms of action. The energies of a body are the atoms of action of which it is capable under certain conditions. This amount, and the character it takes, seems to reflect the organization of the body. Thus chemical energy is bound up with chemical organization, and it is quite plausible to assert that vital and nervous energy are likewise relative to organic and neural conditions. Energy as a category does not carry us beyond the categories characteristic of scientific knowledge, but it does emphasize the dynamic, temporal side of reality. *To be energetic* is a trait of reality at every level, and a trait which is measurable. This trait seems to rest on a tension, or strain, of which systems are capable and which, perhaps, is inseparable from their organization.

The analogy between energy and effort, or will, is close enough to exercise a fascination upon thinkers. It will be remembered that both Schopenhauer and Wundt regarded the will as ultimate reality. May there not be a will-atom which is the reality back of these atoms of action of which physics speaks? Unfortunately for this analogy when taken literally, will is an expression of a complex system in action, it is the personality on its functional side. We must take

evolution with its novelties seriously. Nevertheless, there seems to be this amount of truth about the theory, that, if physical reality were not energetic, will and the functional characteristic of personality could not have arisen. Yet mind and will as categories must not be taken out of their evolutionary setting and level. It is really quite surprising how ready many contemporary scientists are to make these identifications of mind and will with energy. Once the scientist permits himself to philosophize, he outdoes the philosopher in the boldness of his speculations. Perhaps that is because the scientist is always a specialist and is not so aware as the philosopher is of the demands of other fields.

Reflection Begins with Things.—We have argued all along that philosophy is an attempt to understand knowledge and its categories and to lead it back to the data of experience. Now in ancient times with Democritus and in modern times from Galileo onward, philosophy has been engaged with the problem usually stated as the *question of the reality of primary and secondary qualities.* In the historical section of the book we examined the treatment of this problem by Locke and Berkeley. It is now our opportunity to analyze the question afresh in the light of epistemology and scientific facts. Here realism naturally clashes with idealism. At this point, then, we enter upon the typically philosophical mode of handling the question of matter, substance and properties.

Perceptual knowledge does not begin with any subtle, elementary stuff called matter or electricity but with things. It is quite true that, as we have seen, science is convinced that things are organizations and aggregates of something more elemental and basic but our knowledge does not *begin* that way. It is reflection and experimentation which discloses the structure and composition of things. Our adjustments and thoughts are ordinarily directed to complex things as such. Let us begin at this level of experience and work down with reflection.

We shall, then, study the physical world as a perceived and known plurality of things which are objects of our attention and action. These things have magnitude, shape and properties, or qualities, of various kinds. At any one time, their relative position can be known, roughly by perception, and more precisely by measurement in relation to a frame of reference. Some of these things are inorganic and others are organic. We are concerned at present with the common characters of *all* such things. In the next chapter we shall examine living things as such to see wherein they differ from inorganic things.

The Generic Traits of Thinghood.—It would seem that the individual does not have a clear perception of the external world until he has developed and used in a referring way certain characters such as color, smoothness, roughness, shape, size, odor, position. These characters are often called sensations. They are also called sense-data. In perception, these characters are used to interpret the object of perception. In this sense, as we have constantly pointed out, perception is more than sensation. It is a higher level for which interpretation of objects is significant.

The essential meanings, or traits, which qualify and surround the things of common-sense perception are as follows: (a) co-reality with the percipient, (b) independence, (c) spatial magnitude and massiveness, (d) high degree of permanence and (e) possession of dynamic capacities. All these characteristics must hold of an object before it is duly considered a physical thing.

We can take up the first two meanings together. It is clear that they are the meanings emphasized by all forms of realism. I recognize myself to be just one among many things using them and responding to them. The sense of my bodily self—and the self always retains something of this setting—grows up step by step with my sense of other things. Resistance, motor activity, the appreciation of attention, the recognition of colored patterns, all these experiences

enter into this perception of an external world of things. Thus I take a rabbit out of its hutch. It struggles for a while and then becomes quiet. I put it down and then watch it move around and eat clover. To catch it again, I walk towards this colored moving shape. Again I pick it up, and again it resists. Experiences such as these develop the sense of thinghood. The instincts of fear and love with their correlated emotions deepen this sense of relations with other things. There is, also, the contrast with images which have not the vividness of perceptual experiences and which cannot be correlated in the same way with tactual experiences and with bodily attitudes. It is for the psychologist to investigate this sense of reality which finds expression in the judgment of existence. We are all aware, however, of the fact that we can control that complex called our body in a way that we cannot control complexes outside it. Independence of will and independence of awareness are closely correlated. It is undeniable, then, that we have all developed this perception of common, independent, co-real things. Our world falls into a flexible plurality of things which are spatially related and influence each other. These things are distinguishable and numerable.

That things have shape, size and solidity is admitted by all. Shape and size are determined by both visual and tactual data while the muscular sense adds the meaning of massiveness and solidity to things. These characteristics are made more definite by measurement in terms of accepted units. Again, things are relatively permanent and do not fade away but are to be depended upon as existing through fairly long periods of time. They are *continuants*. Finally, our experience with these things shows us that they have the capacity to affect us or other things in specific ways. Both everyday experience and science are engaged in finding out what things are good for, what they are composed of, how they will act in various combinations and under various circumstances. We are interrogating and judging them by means of

the data we can secure which seem to us relevant to, and significant for them.

Primary versus Secondary Properties.—One of the stones of stumbling in the eyes of philosophers when they thought of physical realism was the technical difficulty they had when they tried to relate discriminated characters to objects. It seems absolutely necessary to get clear ideas on this subject.

Hume, it will be remembered, admitted the force of Berkeley's attack upon Locke. Strip the substantial object of all qualities given to sense and you are left with a mere *x*, a nothing which it is not worth while to affirm or to deny. The difficulty is stated by Fullerton in his *A System of Metaphysics:* "And every modern Lockian, whether scientific or non-scientific, sticks in the same difficulty. If the sounds and colors that I perceive do not exist in a world beyond us, but come into being in me when my body is acted upon in certain ways, why may not the same be true of the resistance, the extension, the motion, that I seem to perceive in things? Can I perceive bodies to be resisting, extended, or in motion, unless they act upon my body? May not the resulting complex of sensations in this case, too, be wholly different from the external cause? Perhaps the real world is not, then, the extended and imaginable thing that I have thought it. Perhaps it is only a name for the unknown, a *something* that I cannot more clearly define."[1]

In order to understand the problems in the philosophy of nature we must linger upon this crucial point. We have tried to show that perception and knowledge are complex acts, of the kind usually called mental, directed towards things as their objects. Though these acts have their external causal conditions, we must not substitute these causal conditions for the act of perception, or else we have the old formulation so well expressed in the above quotation. In short, perception is an interpretation of an object. We interpret

[1] Fullerton, *A System of Metaphysics*, p. 147.

objects by means of data, or predicates, which we are able to discriminate.

But reflection has soon distinguished between what may be called sense-qualities, on the one hand, and such factors as pattern, quantity, relations, and powers, on the other hand. Color, sound, taste, odor are sense-qualities, while size, shape, position, behavior, structure, effects on other things, are not qualitative in the same sense. Spatial and temporal order and comparative estimations of things stand out in these factors. Here we have the experiential basis of the historical distinction between primary and secondary qualities. As a matter of fact, the so-called primary qualities are not qualities in the sensory sense. They are assertions of the structures, relations and quantities of things.

It is a matter of historical fact that the English empirical movement never did justice to the element of form and order in experience. Kant tried to, but he was dominated by innatist and rationalistic notions. It is only gradually of late that this subject is being better understood. The perception or discrimination of form or relations undoubtedly has an hereditary basis but it is strengthened by muscular activities and adjustments. We work out a pattern actively in perception.

It is, again, undeniable that science has found itself forced to work along these lines and to supplement them by exact measurement. The result has been the belief that color and sound are to be *correlated* with wave-movements in ether and air, while perceived form and relations can be *correlated* with the measured form and relations of things. But note the difference. In the first case, there is no likeness or correspondence between the two terms, between that which is out there and that which is discriminated in perception; in the second case, there is a correspondence. Is there any reason for this divergence? It seems clear to me that the reason lies in the nature of the terms.

In order to bring out more clearly the significance of this

direction which intensive knowledge of the physical world always takes, let us distinguish between *correspondence* and *qualitative likeness.* We shall say that the knowledge which physical science achieves and which is prefigured in perception is based on the assumption of the correspondence of the order and quantity which we decipher in perception and in measurement with the order and quantity of things. We just find that things are ordered and quantitative and have a texture or pattern. And we find no reason to doubt this belief which appears at the level of perception and is confirmed by additional knowledge. On the other hand, we do find reason to doubt that things are actually colored. Color seems to depend so much upon physiological factors. But, you may reply, is not the perception of order just as dependent upon physiological factors? Assuredly. But here is the difference. *Color cannot be discovered to be a cause of its own perception.* It is, as Berkeley saw, passive. It is essentially a qualitative event in the organism. Order, on the other hand, can be thought as an essential characteristic of the outer cause, *a characteristic which the cause must have to control the perception of order.* In brief, there is no intellectual or logical difficulty in this case as there is for the so-called secondary qualities or predicates. Taking its departure from perception, the human mind has made this discrimination and found it workable.

There is nothing mysterious about the reproduction of order. The order of a landscape can be reproduced in the order of a sketch. The order of a person's features can be reproduced in a photograph. Order is clearly the most reproducible of characteristics. And quantities can be known in terms of comparison or numerical ratios, as is actually done in science. We may say, then, that order and quantity appear in experience. Or we can say that order and quantity as determined in experience correspond to the order and quantity of things. We have categories here back of which we cannot go. They are empirically forced upon us and,

fortunately, can be developed by our thought in all sorts of logical and mathematical ways. It is because of them largely that we find our world to be rational. If there were no quantity and order about our world how different our thinking—if it were still possible—would be!

The order of our perceptual content is filled in with sense-qualities. We naturally assign them to objects. But reflection has suggested the view that these qualities are intra-organic and are causally conditioned by events in the object of perception. And, as we have seen, while there is very good reason to hold to a correspondence of order and quantity, there seems very little justification for the belief that these sense-qualities are like qualities somehow possessed by the thing perceived.

Another point. Science always attempts to express things in their relations to one another rather than in relation to the knowing organism. The human organism is a *constant condition* of perception and of knowledge which, as constant, is eliminated. Even at the level of perception, we can see this tendency at work. We interpret things *comparatively* by means of their perceived sizes. Since two things are perceived by the same percipient, this relation can be neglected as the same for both things. Examine the content of the exact sciences from this point of view. It consists of such terms as mass, size, position, acceleration, energy. In every case, these terms are delivered as ratios. The technique of such information has been briefly referred to in the section on measurement. The manipulation of things and the use of instruments are basic. Observation gives only readings interpretative of this technique. But this technique merely develops more perfectly what the percipient is trying to do in perception and perceptual judgment. It is the form, order, structure, behavior, relations of things which the human reason seeks to grasp.

Does This View Split Nature in Two?—We are now at the very heart of some recent controversies in philosophy.

Idealists have always clung to Berkeley's identification of things with ideas and to his denial that we can make a meaningful discrimination between primary and secondary characters. The neo-realist, also, did not have the courage to break with this tradition. Nor has the pragmatist with his experience-philosophy. And yet we must be just to both of these movements. They prepared the way for a better understanding of the implications of the scientific view of the world. On the whole, the neo-realist did better work in mathematics and in an appreciation of the physical sciences, while the pragmatist was more at home in the biological and social fields. Neverthless, neither grappled very successfully with this age-old problem nor, as we shall see, with the mind-body problem.

We have said that controversy is still rife over the problem we have just analyzed. An able English mathematician, A. N. Whitehead, has attempted to carry the experientialist tradition into physics and to hold that the data of sense or sense-objects, as he calls them, are literally parts of external nature. They are the phenomena which give the physicist his evidence for the existence and character of scientific objects like atoms and electrons. He argues that the traditional position of the physicist to which we ourselves have adhered leads to a splitting of nature into two realms, one mental and subjective and the other physical, and that between these two a gulf exists. To overcome this gulf, he proposes that the data of sense be regarded as literally a part of nature, something which the physicist must fit into his field of objects.

On the face of it, this is a return to some form of naïve realism. Unfortunately it is not clear (1) as to exactly what he means by mind, and (2) what the exact relation is between sense-objects and scientific objects. Yet the anti-Lockian tradition has welcomed with enthusiasm this effort on the part of a very able mathematician. We shall make a few comments here, while pointing out that his analysis of space and time is excellent and quite in harmony with our

own view. We do this particularly because an idealist of standing like Hoernlé has welcomed Whitehead's stand as a revolt against "matter."[1]

In the first place, it is perfectly true that the Cartesian dualism, which was continued by Locke, split nature in two. Mind was non-natural and outside of nature. *But it is obvious that the point of attack upon this position should be an attack upon this conception of mind.* Now it is unlikely that a physicist can tell us very much about mind and it is certainly true that it is not his province to deal with either mind or consciousness. His accepted task is to tell us about the general structures and relations characteristic of physical things, particularly of inorganic things. In the second place, it is the mind that judges and which uses evidence which it regards as significant and revelatory about nature. Now all our position maintains is that the data of perception are intra-organic and, like mind, bound up with the organism of the percipient and thinker. Being naturalists and not Cartesian dualists, we have regarded the organism and all its functions as a part of nature, continuous with the outside world which the physicist is studying. In this sense, both mind and the data of sense are a part of nature but I do not think that they come within the field of physics as a special science for all that. It is true that the physicist cannot investigate his objects and processes without using perceptual data as a basis for description and inferential construction, but this simply means that he could not think and know his world *without data which reveal it.* It does not mean that these data are his objects or literally a part of them. Whitehead does not recognize sufficiently that knowledge involves transcendence. It is a transcendence, however, which involves natural existential conditions in the nature of the percipient organism and its relation to stimulating objects. But we must not confuse the conditions of knowledge with the nature of knowledge.

[1] Hoernlé, *Matter, Life, Mind, and God,* Lecture 2.

Critical realism does not involve any Cartesian 'bifurcation of nature'[1] but a proper understanding of the *locus* of the act of knowledge and its nature. The locus is the organism. Hence we must protest against the bias of Hoernlé who concludes that we must choose between the outlook which accepts matter and "the new philosophy of Nature which proceeds on the principle that, from the first moment of perception to the latest hypotheses of scientific speculation, there is a continuously growing knowledge of Nature—a knowledge for which, as Whitehead says, 'everything perceived is in Nature' and the main task is to follow up 'the coherence of things perceptively known.'"

Surely this last conclusion is the very one which we have ourselves reached in our epistemology while accepting the external and psychological conditions of knowledge. The critical realist holds that we must begin with knowledge from the start and then extend and develop it. It is really a question of whether one is going to be a naïve realist or a critical realist, whether the content of perception is existentially the object of perception. The content of perception is for us revelatory of the object but, if the question of existence is raised, we must assign it to the complex act of perception.

How Shall We Think Things?—In the preceding sections we have tried to show why we accept physical realism and why we think the distinction between primary and secondary qualities is justified. No student can work through a problem of this sort without philosophizing. That is one of its values. Let us now examine the equally interesting question of the distinction between things and their properties.

It will be recalled that Berkeley riddled Locke's formulation of this distinction. Locke had asserted that an *unknowable something* had the primary qualities inhering in it. Berkeley argued that it was not worth while to speak of unknowables and that, moreover, this talk of inherence was a mere metaphor, that, in short, Locke was unwittingly feeding

[1] Whitehead's phrase.

himself with words. What does our own interpretation suggest as an intelligible way of thinking things?

It has gradually been realized that the schema of a substance possessing qualities, or of qualities inhering in a substance, is a reflection into the world of the *form of judgment* with its subject and its predicate. "This book is oblong" is taken as the *assignment of a quality to a thing.* How, then, does the thing possess it? We cannot go into the history of the formulation of this problem from Aristotle's time to Locke's. It was concluded that the objective reality of properties meant that a substance somehow possessed them.

Let us make a fresh start. The obvious way to think about things is in terms of our knowledge of them. That is all the assigning of predicates means. It means that we are thinking things, as we believe correctly, in terms of certain predicates. Things are clearly spatio-temporal systems which are quantitative, have definite structures, behave in certain describable ways, and affect other things in describable ways. To the knowledge falling under these headings, or categories, all relevant data are instrumental. Thus color helps in the discovery of the kind of *event* which takes place in a physical thing when light strikes its surface. Measurement gives the mass of an object, or its comparative size. *In short, we must think the thing in terms of our knowledge of it.* It is quite sufficient to state that a physical thing is extended, structured, massive, the seat of events, the cause of changes in things around, etc. These are characteristics of the thing. But they should not be thought of in a scholastic way as qualities inhering in some mysterious way in a substance. We are here confronted by something ultimate for human thought. We know that things are extended, structured, complex, etc., because we know them that way. That is the way we must think things. But it does not help in the least to change this way of thinking things into a relation between a substance and its qualities.

Perhaps the situation can be made clearer by another approach. We seem forced to assert that things have a nature or characteristics. But is this not another way of admitting that we do know things and that our knowledge falls into definite headings like those indicated above? In short, knowledge implies that there is an object to know and something to know about the object. Thus we always work within knowledge as an accepted fact. Things must have a nature or they could not be known. They are known; therefore, they must have a nature. But this nature we should think of as intrinsic to the thing and having no concern with our knowing as an act or claim. The thing is as it is. It is not a complex of substance and qualities. But we cannot intellectually get nearer to this thing than the *elements of our knowledge.* Because of this situation, we can at one and the same time say that the predicates in terms of which we think things are cases of knowledge and comprehensions of the determinate nature of the things.

The realization of our epistemological situation enables us to avoid all sorts of false problems. Thus we can recognize the very human form of the content of knowledge with its arbitrary units and mathematical symbols and its approximations. From this angle, properties are propositions formulated in a human way and referred to things as bits of knowledge of them. Our minds demand that these propositions harmonize and present us with an intelligible result. But there is no need to assume a substance as that which somehow unifies inherent qualities. We simply think physical objects in terms of definite ideas; and, in so doing, we categorize our world. Our world is ordered, extensive, quantitative, changing, energetic, etc. *The basic implication of knowledge is this cognitional identity of the categories of our thought with the characteristics of things.* Things are revealed in their characteristics.

We have been led to contrast the pattern and quantities, which critical thought stresses, with sense-qualities such as

color, taste and sound. These data are subjective or private, and investigation shows that they are correlated with cortical events. It is highly probable that they are part of the nature of these events. But while sense-qualities are subjective or private they are cues which the mind uses in perception and indicate external events which must then be studied—if our purpose is knowledge—in terms of the categories and methods of physical science. These sense-qualities are often very useful and are excellent clues to differential events. Without them, we could never carry on many of our investigations. But their relation with external events is one of causal correlation rather than likeness.

The reason why it has taken philosophy so long to appreciate the actual situation is because perception masks the nature of knowledge. Sense-qualities and comparative appreciation of order and quantity are equally assigned to the object of attention because they are equally valuable for practical purposes. Reflective knowledge is a higher level than perception, and, for it, distinctions must be made which are not remarked at the lower level.

Are Things Substances?—The dominant usage to-day is to speak of physical and chemical substances. Chemical substances are either elements or compounds of elements. The elements seldom occur in a pure or unalloyed state. Most physical things are, therefore, minerals or compound chemical substances. In regard to these minerals or compounds, science seeks to discover such characteristics as composition, weight and reactive physical and chemical properties. If they can be considered compounds of simpler chemical compounds, these also are intensively studied to get all sorts of information about them.

Surrounding all this information is the conviction and judgment that we have to do with physical systems which exist, that is, which exist as much as we do and are out there affecting us, or capable of affecting us, and in relations

with other physical things. In short, chemical substances are surrounded with what I called realistic meanings. To say that an object is substantial or a substance means that we are ready to apply to it definite attitudes and thoughts of the sort we have concerned ourselves with in this chapter.

One of the striking things which epistemology recognizes is, that we apply to physical objects qualifications or predicates which we are not willing to apply to our thoughts of them. This is the basic paradox or problem of the situation. I say that this box weighs five pounds, has a cubic content of so many feet, is made of wood; but I do not say that my thought of the box weighs five pounds, has a cubic contents of so many feet, etc. In short, I interpret my object by means of my thoughts but my thoughts are not my object. They may later become my object, and then I try to discover how I can think these meanings or predicates. It is this that logic and psychology have been trying to do for a very long time. Had they been more successful, epistemology would not so long have wandered in the wilderness.

We can say, then, that things are substances, not in the sense that we intuit any mysterious stuff or that we grasp a transparent essence which exhaustively informs us all about things or that there is something in which qualities inhere, but in the sense that they are realities to be contrasted with our thoughts of them and known in terms of definite predicates. Cognitively, we can get no nearer to these physical things than that which our thoughts grasp. The physical thing, itself, cannot be given in our consciousness as naïve realism supposes. Knowledge is as near any physical object other than our own organism as we can get. This one qualification we shall find important when we come to consider the mind-body problem.

Constant Characteristics, Events, Relations and Properties.—The detailed knowledge which science has achieved enables us to add to the earlier distinctions which philosophic reflection made.

The macroscopic things to which we, as organisms, ordinarily respond and which we perceive are composed of microscopic things organized in specific ways. The discovery of these microscopic components has been one of the striking achievements of science. To admit them is not to assert that molar, or macroscopic, things are illusions. Quite the contrary. The reality of the one class is bound up with the reality of the other. Microscopic things are usually component parts of macroscopic things.

There are certain characteristics in terms of which we always think bodies. A body always has some size or shape, and it always has some volume. Weight and mass, structure and composition, are other characteristics. Let us call these *constant characteristics.* These constant characteristics are essential marks of physical things. To be a physical thing is to have these characteristics at least. Whether microscopic things have these constant characteristics in the same degree as macroscopic things is a question. But they must at least be such that, in combination, they account for these characteristics.

Events are situated in both macroscopic and microscopic things, in organisms, for example, and in atoms. The particular shape, or volume, of a body can change. One of the features of recent formulations is the inseparability of events and characteristics. Thus the structure of an atom involves a dynamic curve of events. The time dimension must be added to the space dimension before an adequate idea of structure is obtained. As we shall see in the next chapter, dynamic structure is analogous to metabolism in organisms. *Form is sustained by events.*

It is generally acknowledged now that early reflection did not grasp the importance of relations, or connections, in nature. Causal, spatial and genetic relations are stressed by modern science as revealing the order or structure of the world. Causal laws, spatial distributions, numerical laws, genetic laws stand out as significant information about our

world. In the language of logic, this means that *relational propositions* are as important as *attributive propositions.* Ours is a world with a spatio-temporal pattern.

Finally, we come to the scientific idea of property. Besides constant characteristics there are properties which are statements, as it were, of what a substance or thing *will do* under definite conditions. We have the melting point of a substance, its freezing point, its combining capacities with other substances under specific conditions. These properties state the *behavior* of microscopic and of macroscopic, or compound, things.

Concluding Remarks.—This has unavoidably been a long chapter for it has necessarily contained our explicit justification of physical realism. We have tried to bring out the various meanings which 'matter' has had in the past and the dominant meaning at present. At the same time, we have attempted to show that the scholastic schema of a substance in which properties inhere in some mysterious fashion is no longer necessary. *Things* have certain characteristics, relations, and powers; and these can be known in a sufficient way by means of the data which they control in us. We have, also, tried to show the factual and logical justification of the distinction between primary and secondary qualities. Order is reproducible in a way that passive *qualities* are not. The mechanism of perception is such that, even if things had color in their own right, we could never know it. We should also note that physics seeks to penetrate to the microscopic, or ultra-microscopic, parts of the large bodies with which our perception ordinarily deals. It has discovered that things are composed of atoms and molecules, and that insight into nature involves a study of the structure, behavior and relations of these elements. But these elements are no more and no less real than the huge bodies which they compose. The knowledge we have of one must be capable of harmonization with our knowledge of the other.

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CHAPTER XIX

THE NATURE AND ORIGIN OF LIFE

The Evolutionary Approach.—If we really wish to gain insight into basic problems, we should use the best knowledge of the day. Though this knowledge is by no means infallible and may need considerable correction and supplementation as research continues, it is at any one time our best guide. Now the sincere use of this knowledge means that we are ready to criticize, and even relinquish, those ideas which express the more superficial knowledge of past generations and to construct our outlook afresh. In other words, we must be prepared to move beyond the flat contrasts and oppositions of tradition to new ground and there work out the possibilities and suggestions which flow from the facts. Those who adopt this standpoint will hold it wrong to decide in an *a priori* fashion just what is possible in nature, just what can occur and what cannot occur. We must, as it were, wait upon nature herself to answer our questions.

These remarks have, I think, point as an introduction to a study of the nature and origin of life. It is so easy to fall back upon a sharp separation between the organic and the inorganic which makes the gulf between them unbridgeable. The result is apt to be a *dialectical controversy* expressive of fixed concepts. How can the living come from the lifeless? Living and lifeless are contradictories and exclude one another. But is this not to confuse the tools of thinking with the real world which we desire to know by means of them? It may easily be that there are levels in nature to which we could hardly apply either of these sharp concepts. Concepts constantly need reformation and deepening. What

exactly is it to be living? And what exactly is it to be lifeless? Are these conditions abruptly divided in nature, or does the one seem to arise upon the other? It would appear that, in the long run, our concepts are determined by the facts. It is this long-time dependence of concepts upon our experience which should warn us against merely dialectical ways of handling our problems. To put our suggestion in logical language, it may be that living and lifeless, organic and inorganic, are more of the nature of contraries than of contradictories. They may be characteristic *stages* in a process of evolution.

The more the contemporary thinker studies the question of the nature and the origin of life, the more he is convinced that the principle of evolution has a crucial significance for it. And when the principle of evolution is referred to to-day in science and philosophy, something far more wide-reaching than organic evolution is meant. It is the principle of change which is intended, change in the stars, change in the elements, change in the conditions on this earth, change in chemical combinations, change in organisms, change in human life, change in society. The principle of evolution means, in the first place, the reality of basic alterations all through the universe. It stands for the acceptance of *process* in place of fixed and static things. It holds that the world is not a frozen scheme so much as a growth. Now the fault with much of past thinking lay in its assumption that our concepts should correspond to rigid and changeless divisions in the nature of things. The supposed rigidity of the world crept into our ideas and led to what I called dialectical controversy. If we accept the principle of evolution we free ourselves from all this, rather barren, way of thinking.

Of course, as we shall shortly see, the principle of evolution stood for something more than the reality of change. It stressed what may be called *cumulative change*. While we must avoid using the terms, higher and lower, in a valuative way, we can still assert that evolution is taken to involve

stages in complexity of organization. Simpler things precede complex things and make them possible. The very nature of growth or becoming, seems to involve this direction of change. We may speak of this as the sole essential in the *continuity of change*. It would certainly be a very different kind of a world than the one we are in which permitted leaps from the amœba to man without intermediaries. Thus we may say that organic evolution involves a certain *genetic order* in change which suggests cumulation. How crucial and abrupt changes may be cannot be determined beforehand.

Biologists developed the idea of organic evolution at a time when the material world was regarded as a realm of merely mechanical events. So little was known in detail of physical things and relations that a broad scheme which had been found useful in mechanics was extended imaginatively to all physical events. This scheme has guided experiment and research and is justly associated with the conquest of nature. Opposed to it was only the rather mystical and barren appeal to final causes and purposes in nature, an appeal that was associated with theology and theological types of explanation. In the previous chapter we penetrated deeply enough into the nature of scientific knowledge to realize that it is an attempt to grasp order and relations *in* nature. It was this that theology never tried to do, and it was this that mechanics was at least trying to do. Is it any wonder, then, the terms, mechanics and mechanistic, became associated almost inseparably in the mind of the scientist with his cause and his methods? In the present chapter, we shall see the continued influence of this association when the need for it has practically disappeared. Often the mechanistic view of life means nothing more than a naturalistic view of life.

On the whole, Darwinism made as little break with the scientific ideas of its period as possible. It did not challenge the categories and perspective of the physical sciences. What it did challenge was the traditions of a special creation and of fixed species. By means of the twin theories of slight varia-

tions in the germ-plasm and of the survival of those better adjusted to their environment, Darwin succeeded in suggesting a natural explanation of the origin of species. He thus began a genuinely scientific interpretation of biological phenomena. Let us linger upon this point for a moment since it will give us our clue for the oppositions which once ruled biology but which are now largely memories or should be.

The design, or teleological, view of the world had placed stress upon a designing mind which had the power to create and arrange in accordance with its ideas. In physics, this outlook was still present in Newton's mind, but, by the time of La Place, it had practically vanished from physics and astronomy. The order, or pattern, of the universe was now regarded as the natural expression of the materials and forces involved. But, in biology, the outlook still reigned. We may call this explanation by design *external teleology*. It was the common faith that animals and plants were made for man's sustenance and that the human organism could not be accounted for in all its marvelous intricacy apart from the agency of some supreme intelligence. Note the setting. The inorganic realm was now regarded as a region of mere uncoordinated and unintegrated movements, a complicated turmoil of atoms. That an organism could have come out of such a realm by some happy combination of atomic collocations seemed to the majority unbelievable. Such a happy combination would be mere *chance*, and would be extremely improbable. The sole alternative was held to be design. Darwin's contribution was the idea of natural selection, a mechanism, so to speak, which permits us to think of nature as unconsciously selective and directive from behind. The concept of growth was entering into men's minds.

No complete theory of organic evolution is possible apart from an adequate idea of what an organism is. We should not, therefore, expect Darwinism to be the last word on the *method of evolution*. That will come in time as research

continues. We must gain insight into organic processes. The whole setting of physical theory is changing under our eyes. System and pattern in nature is taking the place of the mere turmoil of unsociable parts. It seems likely that we must equally reject chance and design and substitute causally conditioned growth. Ours is a world in which systems are formed and cumulative growth occurs.

The Material World a Domain of Organization.—In order to get the proper perspective in regard to life, we must have adequate ideas in regard to nature at large. We have already seen that the principle of evolution has now a practically universal application. It applies to suns and solar systems, to the chemical elements, to cultures, to nations. But there is another principle which goes with it and which it in a manner presupposes, the *principle of organization.*

Let us now recall some of the facts bearing upon organization which the *new physics* has brought to the front. Research of a remarkably delicate kind in the field of the minute was initiated by the discovery of the X-ray and radioactivity. Speculation of a blind sort in regard to matter was replaced by concrete analysis aided by a technique which dealt with atoms and their parts. I know of few things in the world of knowledge more startling and fascinating than these explorations by J. J. Thomson, Rutherford, Millikan, and the Braggs. And a host of workers in Germany, France and the United States did their share. The significant point for us is that this work has revolutionized the notion of matter. The atom is an organized electrical system varying in complexity from hydrogen to the unwieldy systems which are radio-active. Where is the old, inert atom? Gone into the discard. And this change must affect to its very foundation our notion of the inorganic.

This intensive study of atoms has revealed the fact *that each kind of atom is a system with definite properties correlated with its organization.* Thus fluorine, which has two electrons in the first group and seven in the second, has prop-

erties very similar to those of chlorine, which has two in the first, eight in the second, and seven in the third. In both cases, the outside group of electrons is an arrangement of seven. All the properties of carbon depend on its possessing a six-electron group. A "seven" or a "nine" gives totally different properties and makes a new substance. It has been determined that certain atoms are satisfied and unsociable, and that this characteristic expresses in each case the particular atomic structure. These unsocial atoms constitute nearly perfect gases because their movement easily overcomes the slight attraction which they exert upon one another. On the other hand, the more sociable atoms attract one another and tend to form systems of a molecular type. It has been found that the forces exerted by one atom on another are very complicated in character and are naturally imperfectly understood as yet. It has been suggested that these attractions depend on the way in which atoms are brought together or presented to each other. Thus atoms are not inert, and they do attach themselves to one another to form systems or organizations.

In chemistry, also, organization is a basic characteristic. The chemist deals with complex molecules rather than with atoms. It is interesting to note that the chemist distinguishes three sets of data in regard to chemical structure. These are (1) the empirical chemical composition of the molecule, that is, the chemical elements and their number in a substance; (2) the constitution or manner in which the atoms are linked together; and (3) the configuration of the molecule or the arrangement of the atoms in space. Thus three sets of properties may be looked for, depending upon composition, constitution and configuration. We have quite a range of variables for permutation and combination. In this still more complex domain, then, properties are correlated with organization.

The significance of this fact for life was at once grasped and in part misinterpreted by Professor L. J. Henderson.[1] He saw

[1] L. J. Henderson, *The Order of Nature, passim.*

that nature is not a realm in which organization is an accident. But he did not know how to express this except in terms of the old controversy betwen chance and teleology. He pointed out the *dependence of life* upon the properties of hydrogen, oxygen, carbon and nitrogen and upon their wide distribution, which is quite true. And then he went on to state that this distribution and ensemble of elements and properties is infinitely impossible as the result of mere chance, and must therefore be regarded as a sort of teleological preparation for life.

Logicians point out that chance is a term relative to human calculations. Events in nature have their conditions and are determined by them. In this domain, then, we should speak neither of chance nor of teleology. We must simply recognize that life is dependent upon certain favorable conditions which arose in nature and which thus prepared the way for a higher level of evolution. As against the old mechanical view, we must recognize that nature is a realm of systems and that, therefore, growth and evolution are natural to it. But we should try to avoid using such an ambiguous term as teleology in this connection. There is no reason to assume anything which is of the nature of ends, or purposes, as causally operative to bring about systems in nature. We are, instead, just learning better what nature is and what it can do. Organization appears to be intrinsic and native to physical systems.

Would it be surprising to find that this correlation of organization and properties extended upward to the realm of living bodies? It is certainly true that organization is a fundamental category of biology. Function and structure go together. And this way of approach suggests that the organic and the inorganic are not so alien to each other as was at one time supposed. The more we know about the inorganic to-day, the less we despise it and the less we underestimate its possibilities. Tyndall, were he living to-day, would find no reason in recent results to revise his dictum that matter con-

tains the promise and potency of life. It is this clue that we shall follow in this chapter.

Living and Lifeless Things.—Perhaps it is less easy to distinguish living from lifeless things than is generally supposed. But if we leave border-line cases and examine plants and animals, it is metabolism which soon strikes our attention as differential. Living things are constantly changing in a sort of internally determined way. They grow and assimilate food and, on the other hand, use up material already assimilated. There is something of relative autonomy in the behavior of an animal, for instance. It seems to go on a path of its own which is not completely determined by outside influences, to have *spontaneity*. Living substances act *as though* they carried a goal in themselves.

A lifeless thing does not develop a differentiated, internal form, and it does not contain processes of metabolism. In animals we note response to stimuli, and such response is not a mere effect of an obviously mechanical sort. The internal nature of the organism is a very important determinant of the response.

It would take too long to enter into all the details of this contrast between the living and the lifeless. We could point out, for example, that certain complex substances are found only in living bodies. It does not follow of course, that these substances can never be made by man in the laboratory. But it is, nevertheless, significant that they occur naturally only in connection with life.

Living substance is usually called protoplasm. It has no element peculiar to it. Proteid, which consists of carbon, hydrogen, nitrogen, oxygen, and sulphur, is present in all protoplasm, is the most complex of all chemical substances, and, so far, is known only from organic bodies. Undoubtedly, proteid has peculiar properties which express its composition, constitution and configuration. And protoplasm is a complicated mixture of proteid matter and other material. This complex whole has an organization which must be con-

sidered an historical growth. This type of substance is colloidal in character and is not to be compared with substances which crystallize. To employ the terminology of the biochemist, the life of the cell is the expression of a particular dynamic equilibrium which obtains in the polyphasic system. It is a property of the cell as a whole because it depends upon the organization of processes, upon the equilibrium displayed by the totality of the co-existing phases.[1] The organism is a complex system of energies.

The labile character of protoplasm early attracted attention, and chemists have offered various explanations of it. Some have stressed the presence of cyanide, others the presence of oxygen. Probably both these factors are important, yet they must be seen in relation to the colloidal structure of protoplasm. When we remember that living substance is a complex historical growth we need not be surprised that science finds it hard to determine the factors which give it this labile character. Are catalyzers at work? Is there a structure which assists the balance of anabolism and katabolism? It seems plausible to assume that lability depends not only upon characteristics of chemical parts but also upon their organization into a new type of whole. Such a suggestion but carries out the conclusions drawn for simpler levels of nature; for we saw that the properties of the atom depend upon its organization and that the properties of chemical substances are likewise expressive of their organization.

We have tried to bring out the physical difference between lifeless and living bodies by stressing the characteristics of living bodies. It would seem that living bodies contain the materials of lifeless bodies but possess a constitution and exhibit processes of a more complex type. It is as though a line of development opened up and was followed from level to level, the result in the end being the achievement of bodies with quite novel properties.

[1] Cf. Hopkins, *Nature*, Vol. 92.

The Origin of Life.—For a very long time, the origin of life did not impress men as a serious and almost insoluble problem. Aristotle accepted *abiogenesis,* that is, the rise of organisms from lifeless matter. He held it to be proved that some animals spring from putrid matter. Lucretius in his great poem *De Rerum Natura* asserts similar phenomena of spontaneous generation. A passage will illustrate at once the naturalism of his outlook and his unhesitating acceptance of the rough-and-ready observation of his time in these matters: "To come to another point, whatever things we perceive to have sense, you must yet admit to be composed of senseless first-beginnings: manifest tokens which are open to all to apprehend, so far from refuting or contradicting this, do rather themselves take us by the hand and constrain us to believe that, as I say, living things are begotten from senseless things. We may see in fact living worms spring out of stinking dung, when the soaked earth has gotten putridity after excessive rains; and all things besides change in the same way: rivers, leaves, and glad pastures change their substance into our bodies, and often out of these the powers of wild beasts and the bodies of the strong of wing are increased. Therefore nature changes all foods into living bodies and engenders out of them all the senses of living creatures, much in the same way as she dissolves dry woods into flames and converts all things into fires."

This belief in spontaneous generation continued to be held until very recent times although skeptics now and then arose. Thus we have the emphatic reply of one, Alexander Ross, to the doubts of Sir Thomas Browne: "So may he doubt whether in cheese and timber worms are generated; or if beetles and wasps in cow's dung; or if butterflies, locusts, grasshoppers, shell-fish, snails, eels, and such like, be procreated of putrified matter, which is apt to receive the *form* of that creature to which it is by formative power disposed. To question this is to question reason, sense and experience." The Aristotelian idea of formative forms which direct and

control matter should be noted. We shall note its presence in modern vitalism.

In 1668, an Italian, Redi by name, proved that no maggots are bred in meat on which flies are prevented by wire screens from laying their eggs. Experimentation of this sort was extended into the microscopic world by Leeuwenhoek. The culmination of the disproof of spontaneous generation was reached in the work of Pasteur and Tyndall. The technique of sterilization was developed and applied with the result that it could no longer be doubted that actual living organisms always arise from living things by means of some process of reproduction. The well-known formula, *omne vivum ex vivo,* expressed this conclusion.

The more we know about the complex structure of even unicellular organisms the more such a principle seems to us almost *a priori* evident. But the limits of this disproof of spontaneous generation should be carefully kept in mind. It has not been shown that living matter may not have arisen through a series of stages from material which could be characterized as non-living. Benjamin Moore, a bio-chemist, has argued that colloidal chemistry has made the conception of spontaneous generation, or abiogenesis, less repugnant because it implies a different kind. "The territory of this spontaneous production of life lies not at the level of bacteria, or animalculae springing forth into life in dead organic matter, but at a level of life lying deeper than anything the microscope can reveal, and possessing a lower unit than the living cell, as we form our concept of it from the tissues of higher animals and plants."[1] In his article on Abiogenesis in the *Encyclopedia Britannica,* Chalmers Mitchell develops essentially the same position: "The refutation of abiogenesis has no further bearing on this possibility than to make it probable that if protoplasm ultimately be formed in the laboratory, it will be by a series of stages, the earlier steps being the formation of some substance or substances, now

[1] Moore, *The Origin and Nature of Life,* p. 189.

unknown, which are not protoplasm. Such intermediate stages may have existed in the past, and the modern refutation of abiogenesis has no application to the possibility of these having been formed from inorganic matter at some time in the past. Perhaps the words archebiosis, or archegenesis, should be preserved for the theory that protoplasm in the remote past has been developed from non-living matter by a series of steps, and many of those, notably T. H. Huxley, who took a large share in the process of refuting contemporary abiogenesis, have stated their belief in a primordial archebiosis."

Science and philosophy are naturally led to favor the strongest hypothesis, that is, the one which seems to have the highest probability. Now there are only three important candidates: (1) the theory of the cosmic transport of germs, (2) the theory of special creation by a Divine Will, and (3) archebiosis.

The hypothesis that the germs of life have been transported to our earth through space has been supported by scientists of the standing of Helmholtz, Kelvin and Arrhenius. One form of this suggestion was that living germs could be driven from planet to planet by radiation. Another form was that life could be hidden in meteorites and so transported. The first suggestion is far-fetched and has to meet the objection that conditions in interstellar space are undoubtedly very unfavorable to life. And meteorites are seemingly igneous products which have long circled in the heavens. But the chief objection to these theories is that they are not really attempts to solve the problem of the origin of life. They accept the break between the living and the lifeless and assume a sort of cosmic continuity for life. Life is a constant feature of the universe and cannot be said to have an origin.

The theory that life was created by a divine fiat at some moment in the past accords with traditional religious beliefs. But it is clearly an appeal to supernatural agency and cannot expect to meet with a sympathetic response from science.

Science stresses spatial and temporal continuity and looks upon all events as conditioned by their relevant natural antecedents. This theory would be a theological explanation of life rather than a scientific one. For science, it would be the relinquishment of any attempt to explain the origin of life instead of an explanation. We can also point out that this theory implies vitalism or a life-force.

We seem left, then, with archebiosis as the most probable hypothesis. And a survey of recent biological literature shows that interest in this way of approach to the problem is increasing. The recent advances in photo-chemistry showing, as they do, that energy changes of a high potential are made possible by light—especially the ultra-violet ray—have opened possibilities hardly understood before. Ultra-violet rays change stable material systems into unstable systems with a far higher potential. Recently chemists have been able by their means to transform formaldehyde into sugars. In an article entitled *"The Origin and the Maintenance of Life,"* Duclaux of the Pasteur Institute argues that all the conditions for the origin of life may have been present in the past. "It would suffice that the quantity of water and carbonic acid in the atmosphere be augmented and the amount of oxygen be diminished. An elevation of the temperature of the ocean, in augmenting the dissociation of bicarbonate of lime and the tension of water vapor would produce an enrichment in the direction wished." His conclusion is that life is probably due to a complex combination of circumstances and that, once formed, it developed mechanisms of protection and survival. Chlorophyll is one example of this, as is also the property called autocatalysis. Under favorable conditions, life can multiply itself enormously. It seems to have chemical properties which enable it to use all the free energy around it for synthetic purposes. This point is important, for it is related to the question of entropy. The majority of inorganic processes are *entropic,* that is, they lead to a loss of free energy. But anabolic processes are *ektropic*

and involve a 'stepping up' of potential energy. It is this kind of chemical process which is so characteristic of living things. But, of course, there is in this no creation of energy. And so it is absurd to regard this ektropic feature of living things as unnatural. Radiant energy is of a very high level. What we have in life is seemingly a cumulative concentration and storing of energy in connection with chemical substances, their phasic organization, and their differentiated, spatial construction into bodies. Moore's *Law of Complexity*, that matter, so far as its energy environment will permit, tends to assume more and more complex forms in labile equilibrium, is a protest against the old simplicist mechanicalism which did not recognize organization as a significant and important characteristic of the physical world. I would suggest, again, that molar mechanics which concerns the rather external relations of physical aggregates has dominated thought excessively.

When we realize the complexity of living things, we, at the same time, recognize that such complexity is a cumulative product requiring a very long series of changes. Increased differentiation and integration is a step-by-step process, each succeeding step made possible only by what has gone before. Such a development implies long lapses of time. And it is this demand that geology meets and which the laboratory cannot meet. There is, however, no reason that I can see why the laboratory may not in time, as knowledge and technique develop, see the production of at least the first hesitating stages of life. As science knows more about the details of nature, it is coming to recognize the constant occurrence of creative synthesis, that is, the reality of organization in nature as an intrinsic and characteristic feature of its process. Nature seems to have *directions* and *novelties*.

Mechanism versus Vitalism in Biology.—Science is no more free from basic disputes than is philosophy. The reason for this situation should be obvious to us by now. The basic disputes of science concern its philosophy, that is, the funda-

mental principles and concepts with which it works. All that philosophy is is just a systematic and patient reflection upon such basic principles and concepts. And for any particular field in which he is an expert the scientist can undertake this task of persistent reflection upon the basal concepts and categories involved. The professional philosopher and the reflective scientist can meet and cooperate. In the following discussion of mechanism and vitalism in biology we can make use of this overlapping of philosophy and science. The controversy has been going on for centuries. It is only comparatively recently, however, that a novel point of view has been developing which bids fair to bring order and agreement into the field.

Let us begin our examination of this controversy by seeing what each position is and what it has to say for itself. We shall, then, criticize both strict mechanism and vitalism and point out a third possibility which a larger survey of the world suggests.

Mechanism in biology has meant, rather vaguely, certain things. It has stood for dependence upon, and continuity with, physics and chemistry. It has held that no new factor of a non-physical kind has entered into nature at the level of organic life. In this sense, it has championed what one writer has called *experimental determinism.* The factors science ordinarily deals with—namely, energy and matter—are the sole conditions and antecedents of changes in the organism. But there has usually been something more to the mechanistic view of life than this assertion of continuity and dependence and this rejection of any new factor coming in from outside and operating in a controlling way upon physico-chemical processes in the organism. Mechanism has been not only monistic, or anti-dualistic, in its dislike for a life-force or *entelechy* of an immaterial sort, *but it has been inclined to adopt the past outlook and categories of physics and chemistry without a critical enough consideration of their adequacy for biology.* In short, the mechanist has been inclined to carry over tradi-

tional ideas from a less evolved realm to a more evolved realm and has avoided asking himself what the facts of biology can tell us about nature. There was in biology too great a tendency to abdicate to physics and chemistry. It was taken for granted that a physical system could be *nothing but* a aggregate, or complex, of material particles, and that every change was simply a mechanical resultant of the energies and motions of the parts taken as essentially self-sufficient. It was this bias of mechanism which led it to be called by its opponents the machine-theory of life.

In this exposition of mechanism in biology, we have tried to be fair to both the good and the bad sides of the position. Its good side is its denial that life is occult and mysterious and its determination to push analysis to the utmost. In our discussion of the origin of life, we saw adequate reason to believe that life is but a term for certain kinds of processes and behaviors. It does not seem to be *something,* distinct from physico-chemical processes, which can take its departure like a bird from its nest. We must not think mythologically about life. Again, advance has been made only by means of patient analysis. The structure of the organism must be made out. The inter-relations of the organs must be determined. It must be shown that organic compounds can be made in the laboratory. In short, the grip of scientific technique and method must be completely laid upon this terribly complex set of processes. The bad side of mechanism was its lack of analysis of biological categories. It lived on tradition in these important matters. It was so interested in excluding mind, purpose, and life-force that it forgot to ponder on its own data in a synthetic and interpretative way. This was a very natural stage.

Vitalism is best represented by such men as Driesch, Bergson, and McDougall. We shall see that it, too, has both its good and its bad side.

There are two features of the vitalist's position. He assumes that these two features go inevitably together, though,

as we shall see, it is questionable whether they do. The first feature is the criticism of the adequacy of the mechanistic explanation of life. Clearly this feature is quite relative to what mechanism is supposed to be, and, as I have pointed out, the mechanist has paid so little attention to the positive side of his teaching that it is really hard to say what the categories of biological mechanism are. To the vitalist, biological mechanism means a machine-theory of life. The second feature of vitalism is the assumption that, in order to explain living processes, there is need to postulate a vital force or entelechy, an agent of an immaterial kind which can control and direct physico-chemical processes to results which they by themselves could never achieve. Let us look at this double argument of vitalism.

I presume that it would be generally admitted that Hans Driesch, a German biologist and philosopher, is the ablest representative of modern vitalism just as Jacques Loeb would be given the title of the most determined champion of mechanism. A quotation from Driesch's *The Science and Philosophy of the Organism* will furnish a good introduction to the position. He writes: "No kind of causality based upon the constellations of single physical and chemical acts can account for organic individual development; this development is not to be explained by any hypothesis about configurations of physical and chemical agents. . . . Life, at least morphogenesis, is not a specialized arrangement of inorganic events; biology, therefore, is not applied physics and chemistry; life is something apart, and biology is an independent science."[1] In a recent article, Driesch has defined for us what he means by mechanism. "The processes which take place in a material system will be mechanical for us when the phenomena which occur there can be deduced without a remainder from the knowledge of the positions, the velocity, and the force of the material elements of the system." Assuming that all chemical processes are of this sort if left to themselves, he proceeds

[1] Driesch, *The Science and Philosophy of the Organism*, p. 142.

to show that the development of organisms from eggs cannot be explained mechanically.

Thus when we come to examine vitalism, we find that it consists on the negative side in first taking traditional atomic mechanicalism as literally valid for the physical world and showing that such atomic, or discontinuous, mechanicalism cannot account for what takes place in a developing egg. Driesch argues, if certain living processes cannot be explained mechanically, we must assume *non-mechanical agents.* To these he gives the Aristotelian name entelechy. Another of his terms is psychoid. In an organism, then, we have the directing operations of an agency which has the power to suspend chemical changes at the right time and thus to guide the construction and activity of an organism. This agent is not spatial but acts into space. Here we have a frank dualism.

Driesch tries to be true to biological characteristics and does not wish to speak of teleology in the sense of conscious adjustment of means to end in a plan. Instead, he wishes to employ the expression 'relative to a totality.' Somehow, the egg develops *as though* a sense of the whole system were operating to control the parts.

What shall be our final comment upon this whole controversy? The briefest way to describe it is to say that it is the continuation into our day of the ideas and formulations of Cartesian dualism. The vitalist is clearly a dualist who feels that there is a breach between inorganic and organic nature which can be accounted for only by some *élan vital* or vital urge (Bergson) or by a guiding, immaterial agent. The mechanist accepts the vague categories of traditional mechanism and disputes the assertions of the vitalist. In the meantime, thinkers of a more original and creative type of mind have begun to take evolution seriously and to view nature as a process from level to level, each level characterized by organization and new properties. The categories of biology lie midway between those of chemistry and those of psychology. Knowledge of our world is displacing the blanket-

contrasts which relative ignorance and the dualisms of traditional thought induced.

There are many questions about organic evolution which we have not touched in the present chapter, preferring to stress, as we do, certain essential points. We have attempted to show that neither vitalism nor traditional mechanism are adequate views. Integration, configuration and wholeness are more significant for nature than science was ready to admit. Nature seems able to form systems which have a measure of internal unity and are not mere collocations of self-sufficient units. To apply this notion to life involves the admission of something which may well be called *organicism.* A living system differs in many basic ways from an inorganic system and yet the ground pattern, the fact of organization, is already present in the more primitive and extensive field. It is really quite surprising to note how many scientists are thinking in this revolutionary way which leads, not to vitalism, but a more adequate conception of the physical world in general.

Let us now turn to a study of the mind-body problem, a problem which seems crucial for our interpretation of nature in nearly every regard. Perhaps no scientific and philosophical problem can vie with this one in importance both because of its natural interest for us human beings and because of its far-reaching implications.

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CHAPTER XX

SOUL, MIND AND CONSCIOUSNESS: AN HISTORICAL SURVEY

The Nature of Mind a Problem.—In the preceding chapter, we noted the empirical and undeniable differences between living and lifeless things. We then sought to understand the possibility of the origin of the one from the other by an appreciation of the 'preparation' of the conditions upon which life depends. We saw that life is more of a chemical than of a strictly mechanical affair and that metabolism with a double direction, a certain autonomy of form and action, and capacities for reproduction and adjustment are its chief, general characteristics. The suggestion which we advanced is one which is becoming fairly common now among biologists and philosophers, *viz.*,—that a living thing is a systematically organized whole with new properties expressive of this organization. Life did not spring full-born from nature; rather must there have been intermediate, hesitating phases of integration and disintegration. The tendency to complex organization under favoring conditions must have been there to push nature's experiments and growths. And so, after countless efforts, life was formed and pushed blindly upward. We all know to-day what strange creatures were thus called into being to flourish for a time and then to die out. Of all this the rocks have kept a record of a partial and tantalizing sort.

We also tried to show that the old contrasts between mechanism and vitalism are pretty outworn to-day. It was our suggestion that biology had not taken evolution seriously because it was still fighting its historic battle against design. It had not, in short, explored the new possibilities which had opened

up. After criticizing both mechanism and vitalism as these have usually been formulated, we sought to indicate a new perspective which might introduce biology to a truer idea of its field. In its essentials it was this: biology, also, must have its empirically discovered categories without which it cannot interpret its data. These categories will correspond to such characteristics as structure, function, interdependence, plasticity, relative autonomy. The *genetic* question is, then, simply this: Can we think of these characteristics as having grown, or developed, out of the simpler conditions which preceded them? Our answer was in the affirmative.

It is obvious that, by this answer, we have cast away the neat and unreal contrasts of Cartesian dualism. Nature has now become for us a realm of growth and activity whose limits cannot be set *a priori*. We no longer have a nature robbed of capacity for growth and creation, a merely repetitive domain with no energies and unrehearsed possibilities. It is for us now something which possesses *dim analogies* with ourselves. It is the kind of stuff out of which we have arisen. Leibniz, it will be remembered, saw this, but scarcely in an evolutionary way.

The categories of biology—if evolution is to be taken seriously—should not be reducible to those of physics and chemistry as though what is peculiar to biological facts is an illusion due to complexity and shortsightedness. That was the old view which it has been so hard for the human mind to overcome. Nonetheless, the categories of biology must fit into the *outlines* of the categories of physics and chemistry. Here, also, we must have structure, relations, events, and energies. *A living thing must be a spatio-temporal system.* But it is this fact that biology proclaims. It is a structure of structures, a relation of relations, a system of events and energies. The elements are caught up into a form which they sustain and which yet has properties and characteristics expressive, not of themselves taken separately, but of their integration. A living body is literally a new kind of reality.

If this view is correct, life is an *open line* of cumulative change. And even along this open line the humble beginnings have disappeared so that the monumental heights reached stand out above the inorganic plain. Those who have no historical, genetic imagination can well be forgiven if they feel that the chasm between the living and the lifeless cannot be bridged. Because of their devotion to the Hebraic story of creation, many sincere souls are convinced that the gulf between *homo sapiens* and the beasts of the field had no genetic bridge. We have been giving reasons for another perspective. The details must be left by philosophy to the relevant sciences.

But life rises to mind, and the reality of mind and consciousness presents us with still another apparent gap, or break, in nature. Plants are living things with all the properties of living things. They have in the words of Aristotle a *nutritive soul.* But the higher animals, at least, and man in all certainty, have capacities and modes of selective response which we speak of as *mental.* And this mentality has degrees in its range and power. Now because in the development of this term man has been acquainted with himself at first hand and is aware of certain of the characteristics and processes involved, mind has seemed to him something unique and even less related to the inorganic world than life itself. It has seemed to him something having its roots in vital processes and yet reaching far beyond them. That man can know himself, can become self-conscious, full of plans and purposes, is surely marvelous. And it has often seemed to him that that which in its full development can become the spectator of all time and existence escapes from nature and differs from it even more definitely than does life. If living things tower qualitatively above inorganic things, does not man's mind as greatly tower above things which merely have life? But may we not have here another open line of cumulative change?

Our thoughts are full of old traditions in regard to the

soul, mind and consciousness. These ideas get in our way when we try to think freshly about these things. They make a fog, as it were, which prevents us from seeing sharp outlines. We cannot repress them by an act of will, but must try to rob them of their power by bringing them to self-consciousness and analyzing them.

Now that we have analyzed space, time, matter, and life, we should not be surprised to find that familiar terms do not necessarily have any precise or exact meaning for us. They are vaguely suggestive and indicate what the logicians call a "universe of discourse." An adequate, comprehensive meaning fitting into the total demands of a whole complex of questions and problems is something to be achieved by patient effort rather than something we start out with. Let us begin this effort by finding out what mind and soul and consciousness meant in the past. Perhaps, there has been a development, or a critical deepening, of these terms which will put us on the right track for our own systematic reflection.

Primitive Notions of Mind.—How does primitive man think of himself? The answer seems to be that he thinks of himself as a body and a spirit. A spirit is a kind of tenuous being different from tangible things. In his book on *Primitive Religion,* Lowie describes the views of a Shoshoni Indian. Red-shirt Jim had become sick from breaking a food taboo. This was his experience: "I was still breathing. I thought of seeing my dead father and mother, brother and relatives. I wished to die immediately. For three days and four nights I lay in my tent. At last on the fourth day my soul (múgua) came out of my thigh, made a step forward and glanced back at my body. The múgua was about as large as this (ten inches). My body was not yet lifeless. When the múgua had made three steps forward, my body dropped, cold and dead. I looked at it for some time; it made no movement at all."[1] This soul goes to another region and sees the Father who is a handsome Indian. Here it is washed. Now, as Lowie

[1] Lowie, *Primitive Religion,* p. 101.

points out, a soul that is washed and is ten inches tall does not correspond to our notion of spirituality, yet this soul is supposed to be distinct from, and to consist of a finer essence than, the human body.

There is general agreement among anthropologists and psychologists with regard to this early outlook which, following Tylor, is called *animism*. There seems to have been two motives at work. Primitive man notes the difference between a living man and the same man when dead and concludes that there must be *something* in him when alive that is absent when he is dead. And, in the second place, the savage sees in dreams and visionary experiences human shapes which are yet different from those he perceives in waking life. Tylor was convinced that "nothing but dreams or visions could have ever put into men's minds such an idea as that of souls being ethereal images of bodies." In this fashion, the idea of something vital to the living man is combined with the idea of a phantom double to form the notion of a ghost-soul.

This conception has been so influential and so persistent that it is well to get it clearly before our minds. The following quotation from McDougall may assist us: "The belief most widely current among the peoples of lower culture is that each man consists, not only of the body which is constantly present among his fellows, but also of a shadowy vapour-like duplicate of his body; this shadow-like image, the animating principle of the living organism, is thought to be capable of leaving the body, of transporting itself rapidly, if not instantaneously, from place to place, and of manifesting in those places all or most of the powers that it exerts in the body during waking life. Sleep is regarded as due to its temporary withdrawal from the body; trance, coma, and other serious illness, as due to longer absence; and death is thought to imply its final departure to some distant place." [1] It appears, then, that the ghost-soul was a theory suggested to the mind of primitive man to explain a great many phenomena

[1] McDougall, *Body and Mind*, p. 1.

in which he was passionately interested. The imaginal basis of such a theory manifests itself in such terms as *manes, shade, spirit, ruach, anima, pneuma.* I well remember that an old Norwegian woman once told me, when I was a boy, that the soul is the breath, and her reason was just this one, which primitive man was influenced by, that the breath leaves the body when an individual dies.

This semi-material spirit, which was conceived as the source of life and of feeling, thinking and acting, was thus modelled upon the shadow, the breath, and the experiences had in dreams. We must remember that early man had no scientific explanations of these phenomena as we have them to-day. He did not know that shadow is due to the interception of light, that breath is air and water-vapour, that dreams are centrally-aroused experiences. He thought that the dead actually spoke to the living in dreams and that, in sleep, this ghost-soul travelled away from the body. Those who remember their Iliad and the Bible will recall how Patroclus appears to Achilles in his sleep and how Samuel is called out of Sheol to speak to Saul. It is obvious that modern spiritism is not far removed from this primitive outlook. Do we not hear of people photographing spirits? Do not spirits rap upon the walls of houses and upon tables and take up their residence in the bodies of mediums? Much of what we call superstition is the survival of this primitive theory.

The Mind-Soul in Ancient Philosophy.—Thus far we have used the terms mind and soul almost interchangeably. Our excuse must be the historical one that for centuries they were so used. Even the Greek and Roman philosophers hardly distinguish between the two. More than this, they did not at first distinguish very sharply between matter and spirit. The matter by means of which the early physicists undertook to explain nature was something vital and active, something with many potencies. It was not until Plato that the dualism between matter and spirit with which tradition has made us all so familiar *began* to take shape. In the sixth century,

Anaximines of Miletus taught that "our soul, which is air, rules us." Heracleitus of Ephesus, the philosopher of becoming, looked upon the world-soul as a sort of fire and held that it is the fire in us that is our life and our reason, a view which appears again among the Stoics. Anaxagoras, to whom Socrates and Plato referred as one who almost anticipated their teaching, believed that mind ordered the elements. But this mind turns out to be only a very fine kind of matter which acts in a vital, physical way. In our discussion of materialism, we have already examined the teaching of Democritus. For him, we saw, the soul consists of the smooth, subtle fire-atoms which penetrate the body. These fire-atoms give us different experiences in different parts of the body. In the brain, they give us thought, in the heart, anger, in the liver, desire. Death is the cessation of this differentiated play of fire-atoms.

But it was not these early thinkers, only, who thought of the mind-soul as material, even though of fine stuff. The Epicureans and Stoics, very influential schools of the Hellenistic period, were just as materialistic in their thinking. The Epicureans followed Democritus and believed that the soul when unprotected by the body would soon blow to pieces and vanish. It was too fragile a thing to last alone. This school was outspoken in its disbelief in immortality. We find such epitaphs as "We are mortal; we are not immortal." "I was not, I was; I am not; I do not care." The Stoics followed Heracleitus and taught that the soul is a bit of the world-fire or world-reason which is God. We can speak of them as energists and pantheists. They were inclined to take the possibility of immortality seriously, though, as we find in Marcus Aurelius, they felt no dogmatic certainty.

But it is Plato who is responsible for the development of the immaterialistic conception of the mind-soul. Undoubtedly, his point of departure is animism—perhaps the animism of the Orphics with their belief in transmigration of souls. But this animism was interpreted in the light of his rationalistic

metaphysics. The mind beholds ideas, or forms, which are eternal and immutable. And the mind which beholds these supersensible realities is in a measure like them. The soul belongs to the unseen, and the body to the seen. The *Phaedo* is one of the great documents of this direction of thought. Socrates, who is in prison, discusses the nature of the soul and the possibility of immortality with his disciples. The whole Dialogue should, of course, be read at some time, but a brief excerpt must serve our present purpose. "When the soul and the body are united, then nature orders the soul to rule and govern, and the body to obey and serve. Now which of these two functions is akin to the divine and which to the mortal? Does not the divine appear to you to be that which naturally orders and rules, and the mortal that which is subject and servant? True. And which does the soul resemble? The soul resembles the divine, and the body the mortal—there can be no doubt of that, Socrates." Taking the soul as divine, Plato argues for its pre-existence and distinctness from the body. It is simple, unitary and indecomposable.

But we must not neglect another aspect of the question. Plato was a keen psychologist and was quite aware of the complexity and variety of our experiences. Following this direction, he taught a tripartite division of the soul as immersed in the body. There is the appetitive part connected with the belly, and to this is to be assigned all our gross desires and appetites; there is the will, or spirited part, which listens to reason, and this is to be correlated with the breast and heart; and, finally, there is the rational part connected with the head. It is this last part, alone, which is really divine and unchangeable.

Aristotle was in all essentials a Platonist, and yet he wished to avoid the sharp dualisms which Plato gloried in. Thus he wanted to bring body and soul closer together. The soul is the *organizing form* of the body. We can distinguish, he thinks, three levels or elements in the soul, the nutritive soul,

the sensitive soul, and the rational soul. The nutritive soul is the vital principle which organizes matter and forms the body. All living things have this kind of a soul. Animals have, further, the sensitive soul which enables them to sense their environment and respond to it. But man has a rational soul which consists of two parts, passive reason and active reason. The passive reason corresponds more to what we would call association and imagination. The active reason is creative and directive. It is the truly divine part in us, that part which may be immortal.

It must be admitted that Aristotle left certain aspects of this view of the mind-body problem indefinite. Does the soul stand to the body in the same relation as a sailor to his boat, as he somewhere suggests? Or is the relation of form and matter more intimate? Some of his peripatetic (the name of his school as the Academy was the name of Plato's) successors dropped back into naturalism and denied that there is any dualism. The Christian Church in the period of scholasticism adopted Aristotelianism as its philosophy but gave emphasis to the dualistic, Platonic trend. At the time of the Renaissance, this traditional interpretation was challenged and mortality deduced as a consequence.

Under the influence of mystical, religious motives the soul gradually becomes increasingly non-spatial and ethereal. The terms used are dominantly negative. In Plotinus we have the culmination of this movement which is rightly called Neo-Platonism. Its effects continue to this day and appear in some measure in the teaching of Bergson. Thought breaks through the laws and methods of logic. The soul is said to be present in all the parts of the body and yet entirely in all parts and in the whole. There is interpenetration of some immaterial kind. The soul can laugh at the nature of space. Fullerton's comment is worth quoting: "What he tried to do is clear, and it seems equally clear that he had good reason for trying to do it. But it appears to us now that what he actually did was to make of the mind or soul a something very like an

inconsistent bit of matter, that is, something in space, and yet not exactly in space, a something that can be in two places at once, a logical monstrosity. That his doctrine did not meet with instant rejection was due to the fact, already alluded to, that our experience of the mind is something rather dim and elusive. It is not easy for a man to say what it is, and, hence, it is not easy for a man to say what it is not." [1]

As we have already pointed out, the Platonic-Aristotelian view of the mind-soul as an immaterial substance temporarily allocated to the body and accounting for its life and the individual's experiences dominated the Middle-Ages. These were the centuries of faith and of easily accepted tradition. With the rise of science and the re-birth of analytic enquiry, the theory of the mind-soul passed to another stage.

Mind in Modern Philosophy.—It is generally admitted that a new era in the envisagement of the mind-body relation dawned with Descartes. It was not that the traditional dualism was challenged, for it was not; it was rather in the new interpretation of the body that the novelty lay. The body was conceived by Descartes as a complicated machine. Animals, he held, are purely machines, while man is a machine with a soul which guides it. But he did not leave the matter there. He went on to suggest a principle of explanation. The behavior of animals can be regarded as the resultant of reflexes. A reflex is a mechanical response to a stimulus, and is exemplified in the knee-jerk and in the swift closing of the eyes at the approach of an object. An animal is, of course, a very complicated machine but complication does not alter the scheme of construction. Why assume, then, that animals are conscious? Consciousness is a function of the soul and not of the body. And there is no good reason of a theological sort to suggest that animals have souls. In fact, the assumption would lead to all kinds of theological difficulties, for souls are naturally immortal. We may say, then, that Descartes solved the traditional mind-body problem for animals by

[1] Fullerton, *An Introduction to Philosophy*, p. 104.

simply deciding that there is no such problem. The body is the sole reality in this case, and it is a mechanical system. We shall see that many modern psychologists desire to solve the problem in the same way for man.

But a human being is a soul as well as a body. It will be remembered that Descartes postulated two kinds of substances, extended substance and thinking substance. The essence of the human mind-soul is thinking, and it is immaterial and unextended. Less mystical than Plotinus, Descartes bravely located this immaterial soul in the pineal gland of the brain. There it was supposed to sit and control the movements of the animal spirits of the brain, or, as we would say, the nervous currents. This position is technically called *interactionism.* The modern interactionist, as we shall see, is vaguer in his theories as to how these two realities, which are by theory alien to each other, secure effective contact, but the gist of the position is contained in Descartes. And here we must make another comment. The Cartesian position differs from the traditional animistic position, which goes back to primitive times and from the great classic tradition, which we found characteristic of Plato and Aristotle, chiefly in the new theory of the body.

The historians of philosophy and psychology are very well agreed that two parallel and, in a way, supplementary developments now took place. On the one hand, the mechanical conception of the body became dominant, and, on the other hand, the mind-soul was replaced by consciousness, conceived as a stream of ideas. A very brief description of these developments will be sufficient for our purpose.

We have already studied the larger aspects of the mechanistic conception of organisms in the preceding chapter. Our conclusions were, in essentials, the following: The mechanistic outlook grew up in the service of experimental demands and as the expression in the biological field of the idea of cause-and-effect nexus. It was opposed to vitalistic and animistic dualism with its assumption that nature was not a closed

system but, instead, a system which was constantly being interfered with from outside in incalculable ways. Internally, the mechanistic view was naïve and incredibly simple-minded. It undertook to carry the current views of physics over into biology without any essential modification. We must remember that these were pre-evolutionary days and that even physics was largely a matter of molar mechanics because so little was known of the details of physical changes. What must we say of this movement? I think that we must say that it was the sole fruitful direction for science to take. What it needed was *an internal correction* in the direction of a development of its categories; and it is this correction which, as we have seen, is taking place to-day. We have suggested that the idea of levels of causality, expressive of levels of organization, offers this correction. The essential feature of the mechanistic view still remains, *viz.*,—its denial of a non-physical principle.

The second development was the substitution of a stream of consciousness for the substantial mind-soul of the classic animistic tradition. Locke began this development by his genial skepticism. He even admitted the possibility of a peculiar sort of materialism. He writes: "It is not much more remote from our comprehension to conceive this (that God should give matter the power to think) than to conceive that God should superadd to matter another substance with a faculty of thinking; since we know not in what thinking consists nor to what sort of substances the first eternal thinking Being has been pleased to give that power." I cannot forbear quoting another passage from Locke which shows both his vigorous common sense and his bewilderment: "Every one finds in himself, that his soul can think, will, and operate on his body, in the place where that is; but cannot operate on a body, or in a place an hundred miles distant from it. Nobody can imagine that his soul can think or move a body at Oxford, whilst he is at London; and cannot but know that, being united to his body, it constantly changes place all the whole

journey between Oxford and London, as the coach or horse does that carries him."[1]

The steps by which consciousness came to replace the mind-soul of tradition are extremely interesting. The student will recall the rise of empiricism as represented by Locke, Berkeley and Hume. It will be remembered how Hume denied that he could find in his experience anything corresponding to the soul of tradition. Every idea must spring from some impression or more immediate experience. But there is no impression to which this notion of a spiritual substance corresponds. It is, therefore, quite an illusion, or fiction, to which it is more than doubtful whether any clear idea corresponds. As a challenge to rationalism, this introspective analysis of Hume's appears quite valid and it has, in fact, been carried farther by modern psychology. Is it not, however, too phenomenalistic? And, of course, it neglects the historical development of the idea of a ghost-soul. It is this which anthropology has enabled us to comprehend. The eighteenth century was not given to the historical interpretation of ideas.

But it is the positive side of this empirical movement in which we are at present chiefly interested. It would seem that both philosophy and psychology fell into the mistake of considering consciousness as a mosaic of elements called "ideas." These ideas are bound together by association much as physical things are supposed to be bound together by gravity. The work of the mental sciences was, then, to analyze these ideas and correlate them with nervous processes. The tradition on both sides was to neglect organization and to emphasize supposed units. We shall have more to say about this outlook and its weaknesses in the next chapter. Suffice it to point out here, that the Cartesian dualism was replaced by a consciousness-body dualism, both sides of this more empirical dualism being analyzed into as simple elements as possible. The logical result of this dualism was *epiphenomenalism,* the

[1] Locke, *Essay*, bk. 2, chap. 23, sec. 20.

view that the stream of ideas which accompanies changes in the brain is merely a shadowy duplication. And this epiphenomenalism was naturally continually on the point of lapsing into extreme materialism.

Unsatisfactory as this outlook appears to us now, it seemed for a long time the best that philosophy and psychology could accomplish. The result was a psychology without a soul. The hypothesis of a soul did not seem to be of any interpretative value. William James put this in his inimitable way, and I cannot do better than quote from his Hibbert Lectures: "Yet it is not for idle or fantastical reasons that the notion of the substantial soul, so freely used by common men and the more popular philosophies, has fallen upon such evil days, and has no prestige in the eyes of critical thinkers. It only shares the fate of other unrepresentable substances and principles. They are without exception all so barren that to sincere inquirers they appear as little more than names masquerading—*Wo die begriffe fehlen da stellt ein wort zur rechten zeit sich ein.* You see no deeper into the fact that a hundred sensations get compounded or known together by thinking that a 'soul' does the compounding than you see into a man's living eighty years by thinking of him as an octogenarian, or into our having five fingers by calling us pentadactyls. Souls have worn out both themselves and their welcome, that is the plain truth."[1]

The Kantian-Idealistic Tradition.—In our sketch of the changing attitude toward the mind-soul, we have stressed the development among empiricist, scientific circles of the so-called "psychology without a soul." Certainly, the soul-substances of scholastic traditions fell upon evil days. Associational psychology came to the front, and these principles of association were given a neurological foundation, largely in terms of contiguity, recency and frequency. It increasingly seemed as though the organism were the primary unit and the flow of consciousness but a reflection of blind nervous events. In the

[1] James, *A Pluralistic Universe*, pp. 209-10.

next chapter, we shall examine the later developments of this trend and point out the differences between structural psychology, functional psychology, behaviorism and Freudianism. We shall see that a spirit of deeper questioning fell upon psychology. I do not think it is misleading to say that psychology and biology have come ever closer together. The feeling is that a dualism is impossible. But, as yet, no consensus of opinion has been reached on how to restate and relate mind, consciousness and the organism.

But it would hardly be justifiable in this semi-historical survey of the theories of mind in modern philosophy to omit completely the perspective characteristic of the Kantian-Idealistic tradition. Fortunately, our introductory survey has made us fairly familiar with this tradition. All that we need to do is to point out its disagreement with the empiricist standpoint. The empiricism of Hume and his successors looked upon the mind as a bundle, or constellation, of ideas or perceptions. Kant, on the contrary, stressed the reality and significance of relations. Such relations presuppose, he believed, an active agent which introduces order into the manifold of sensations. It is this active agent which Kant called the *a priori unity of apperception.* From this centre as a source radiate order and complication in the field of experience. Kant was led to distinguish between the subject and the empirical self, which is but another object along with other phenomena. To make a long story short, this idea of a basic *subject* to which all experience is relative became a tradition in much of modern philosophy. It is said that the subject is active and synthetic and is not for a moment to be compared with the spiritual soul-substance of tradition. All psychology implies a self which is not merely an idea or presentation but something more basic which *has* the idea or presentation.

Though critical toward many of Kant's assumptions, many contemporary psychologists and philosophers are yet convinced that psychology cannot leave a basic self out of its

data and resolve consciousness into a mosaic of mental elements called ideas and feelings. For them, the ultimate units of psychology are 'I feel something,' 'I know something,' and 'I will something.' James Ward, Mary W. Calkins and McDougall are representatives of this outlook. It may be called a self-psychology. In fact, that is how Miss Calkins defines psychology; it is the science of the self as conscious.

But what is the self? For Kant, the self was an unknowable source of syntheses. Let us remember that many of these writers are idealists in their philosophy or else frank dualists who regard the material world as a mechanism capable only of automatic action. The situation is a fascinating one, and we shall examine it in some detail in the next chapter. I shall make the suggestion that we are to-day the witnesses of the rise of a *functional view of mind* and that the self-psychologists, like the animists of biology, are critics of the atomic, sensationalistic views of traditional empiricism but critics who lean on the past. Like the vitalists, they do not take evolution seriously. The result is the tendency to think of the self, not as a functional growth which lifts life to a higher level, but as an entity attached to the body.

The New Currents in Psychology.—We hear to-day very frequently of the "new psychology" just as we hear of the "new physics." Things are moving very rapidly, indeed, in this field, and, as a consequence, there is much bewilderment. Let us not forget that the theoretical problems involved in psychology are tremendous in their scope. To determine what consciousness and mind are and to locate them in nature is no easy task. Nothing less is involved than a new philosophy of nature. The psychologist must understand his data and his categories and yet relate them to the data and categories of biology and of chemistry. We have seen how difficult the biologist found a similar task. And I do think that it is undeniable that the problem of naturalizing mind and consciousness, of fitting them into the outline which the inorganic sciences sketched, is still more difficult. I would say that, on

the whole, the philosophy of the past has not been of much assistance. And yet I do not see how psychology could answer these questions apart from philosophy. The psychologist who has an answer for them *is* a philosopher. But if this is the demand upon the theoretical psychologist, we must admit that the situation in psychology has not, on the face of it at least, been of much assistance. Psychology has been split up into groups. There are the animal psychologists, the medical psychologists or psychiatrists, the industrial psychologists and the usual academic group carrying on the tradition of normal, human psychology. This diversity has brought specialization of interest and of terms. And yet out of this very diversity it would seem that a larger view-point with more adequate ideas of mind and of consciousness is slowly arising. I shall argue that a *functional view of mind and consciousness* is taking shape which, when clarified, will completely replace the traditional dualism formulated by Descartes which reached its logical expression in epiphenomenalism, that is, the thesis that mind has no efficacy in nature. The re-interpretation involved will be profound and will demand an evolutionary placement and definition of mind.

It is wrong to exaggerate the new currents which have given renewed life to psychology; yet Freudianism and animal psychology have been undeniably effective in determining a larger perspective. To Freudianism we owe, perhaps, an increased interest in the dynamic and complex character of mind. In spite of the exaggerations of which it has been guilty, it has called attention to the desires and tendencies which are struggling for control of the organism. It has in this way reenforced, and made more specific, the tradition of voluntarism. To animal psychology we owe that outlook which we call behaviorism. Behaviorism has stood for the continuity of man with the animals and for the objective study of mind. By so doing, it has realized the total setting of mind in the organism and the part played in it by instinct and habit. Even the glands have come in for their share of recognition in

the total economy of the organism. All this leads to a concrete idea of mind. Mind as a static substance is in these days scarcely conceivable.

So much for our historical survey of soul, mind and consciousness. Let us now interrogate contemporary psychology with the aim of eliciting its categories and interpreting them in the light of the view of nature which we have been constructing.

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CHAPTER XXI

PSYCHOLOGY AS A NATURAL SCIENCE

The Situation in Psychology.—Just as we turned to biology for specialized knowledge of living things, so we now turn to psychology for a similar knowledge of *intelligent,* living things. There can be no doubt that psychology by reason of its years of persistent and patient investigation has obtained a rich store of knowledge in regard to human and animal behavior and in regard to what we ordinarily call mental processes such as perceiving, remembering, reasoning, etc. This information has led to the development of theories and to the rise of analyzed concepts. The psychologist has a better sense of what goes on when a person perceives, acts, reasons, remembers, wishes, than has the individual who has merely perceived or remembered without trying to study these activities.

In spite of this knowledge, present-day psychology is a little non-plussed about its subject-matter. Violent disputes have broken out, and belligerent schools have been formed. We hear of structuralists and functionalists, mechanistic psychology and purposive psychology, introspectionists and behaviorists. And even these schools have their subdivisions. This situation is not to be deplored but welcomed, for it means that psychology has reached the stage of self-consciousness and that it is no longer willing to live on inherited concepts. What, after all, is consciousness? What are mental states? What should we mean by the subjective? Is science limited to external observation? Or is psychology the only science which can use introspection because of its subject-matter? In philosophy there has been in the New Realism a distinct

dislike of the subjective. It is not surprising that the same dislike has spread to psychology. The following excerpt from an article in the *Psychological Review* by an author who leans towards behaviorism expresses the situation as it still holds: "There is evidence at present of a pronounced disposition to pause for a consideration of fundamentals. What is psychology anyway,—what is its subject-matter and what are its methods? The stock definition that it is concerned with 'the description and explanation of states of consciousness as such,' states of consciousness being something which everybody knows and nobody can define, has fallen or is falling into disrepute."[1] Objective psychology or psychology as a natural science, it is said, studies behavior, and behavior is something observable. The reactions of the white rat which learns a specially prepared labyrinth give data which are open to all in exactly the same way that the reactions of chemicals in a test-tube are. Is not this, and this alone, science? The older psychology was less concerned with behavior and more with the characteristics of mental processes and their conditions as determined by introspection. The demand facing the modern psychology is to do justice to *all* the investigations which throw light upon intelligent behavior and to work out a point of view which harmonizes them.

Let us recall that, as we passed from physics and chemistry to biology, we became aware of something novel about living things that only a new and specialized science could adequately deal with. We examined the controversy between mechanists and vitalists and suggested an outlook which, while nearer mechanism than vitalism, seemed to do justice to the empirical facts by enlarging the rather rigid, inherited categories of biology. Must not something of the same sort be done for psychology? In both cases, the scientists concerned have slowly been working out a more plastic outlook. In fact, it would make the philosopher hesitant if the ideas which came

[1] Bode, Psychology as a Science of Behavior, *Psychological Review*, 1914.

to him as illuminative had not already begun to suggest themselves to the investigators familiar with their fields and its demands. Now psychology appears to be in much the position that biology is in; only the difficulties are, if anything, greater for psychology.

The Classic Tradition.—Let us begin our discussion with a few typical definitions of psychology expressive of the classic tradition. One from Titchener is as follows: "Psychology may be defined as the science of mental processes. Each of the three terms included in the definition requires a brief explanation. A *process* is any object of scientific knowledge which is not a 'thing.' A 'thing' is permanent, relatively unchanging, definitely marked off from other things. A process is, by etymology, a 'moving forward.' It is a *becoming something,*—a continuous operation, a progressive change, which the scientific observer can trace throughout its course. . . . A mental process is a process in the origination and continuance of which we are ourselves necessarily concerned,—a process the nature of which is determined by the constitution and functions of an organism, an organized individual."[1] Angell, who is generally regarded as one of the leaders of the functionalists, defined psychology in much the same way: "Mental facts, or facts of consciousness, constitute the field of psychology."[2] One of the latest writers on the subject continues this tradition and asserts that psychology is the science of the mind (consciousness, mental life, or other more or less equivalent expressions) and that some other term must be invented for the science of behavior.[3]

It follows from these definitions that the facts of psychology concern the *experience* of individuals. The terms, mental and conscious, have taken on the meaning of that which is an element in the individual's field of experience. Both of these terms are, perhaps, unfortunate because they so easily carry

[1] Titchener, *An Outline of Psychology*, pp. 7-8.
[2] Angell, *Psychology*, p. 1.
[3] J. S. Moore, "Behavior vs. Introspective Psychology," *Psychological Review*, 1923.

with them old traditions of dualism. As a science, psychology makes no such assumption. It studies its own class of facts in accordance with the methods it has found useful. It may well leave it to philosophy or to the growth of science, itself, to determine whether any dualism is necessary.

It would have been well if orthodox psychology had more generally adopted *a more neutral terminology*. On the whole, the definition of an English psychologist, Stout, seems to fulfil this demand better than the definitions already given. He writes: "Psychology is the science of the processes whereby an individual becomes aware of a world of objects and adjusts his actions accordingly." This definition stresses those processes which constitute awareness and behavioristic adjustment. What these processes are is a matter for specific investigation.

So pervasive has been the dualistic tradition that the author of this very satisfactory definition proceeds to assert that psychology does not aim at increasing our knowledge of the material world, an assertion which assumes that the individual is not a part of the material world, for are not these processes, studied by psychology, said to be processes of an individual? On the face of it, psychology would seem to deal with all the processes constitutive of awareness and response on the part of individual organisms. There would seem to be no need to divide the organism into two kinds of things, mind and body respectively, unless such a division is absolutely forced upon the science by the facts.

The Method of Introspection.—The chief method of classic psychology was introspection. And I do think that it is undeniable that much was accomplished by means of the method. It was first used in an individual and uncontrolled way by the early empiricists and was later connected with experimental technique by men like Fechner and Wundt. Introspection is simply self-observation, the noting of relevant data in his experience by the subject of an experiment. It is contrasted with usual scientific observation which deals with

things external to the individual observing and employs the sense-organs of external perception.

The unfortunate thing was that introspection was often considered a sort of intuition which could not go astray. When it did go astray and led to distinctions and beliefs which had later to be given up as untenable, it was hastily condemned by certain groups. As a matter of fact, introspection is just as complex a process as external perception. It requires training. Not every one is a good introspectionist. Moreover, covert, or subjective processes, are very complex and variable. A bit of experimental work should be done over and over again and with different subjects; and there should be no suggestion as to what the subject ought to find. If, under these conditions, there is a fair amount of agreement, something has been accomplished. It should also be remembered that individuals do actually differ.

But because of the dualistic tradition in psychology the limitations of introspection were not fully recognized. It was often supposed that, since consciousness was a sort of separate stuff, it could be studied completely and, as it were, in isolation by this method and that this was the only method which could get in contact with it. But this view of consciousness has been going by the board and is clearly a dogma rather than something inevitable. In short, psychology has no need to begin with such an assumption. It is studying *all* the processes constitutive of awareness and behavior; and it may easily be that awareness is inseparable from a kind of behavior.

It is probable, then, that psychology will come to the conclusion that introspection is a valuable method which enables us to study the incipient stages of behavior, those covert processes which have developed between stimulus and response. The ultimate fact seems to be that the subject of an experiment is in his consciousness on the inside of these processes and that he can observe them in a way that the observer cannot. On the other hand, the observer can note facts of

overt behavior and gather significant data—often of a quantitative sort—which supplement the data of introspection.

It would seem, then, that psychology must simply rid itself of the fear that consciousness is something *subjective* in a dualistic and mysterious sense. Consciousness is, on the face of it, merely intra-organic and intrinsic to the activities and responses of a person. Back of all this dislike of consciousness and introspection is a naïve epistemology which is not aware that *all science* is a product of mental operations of observation and reasoning. The difference between introspection and extrospection is one of direction. In extrospection we are dealing with things and using our sense-organs and hands. Furthermore, we can develop methods of manipulative measurement. In introspection, we are cut off from these methods and we can employ no sense-organs. All we can do is to attend to processes as these develop in us. But, in both cases, the individual must be active and gather data. In short, the growth of neo-realism and pragmatism has given psychology a wrong idea of what science is. The bias of physical science has also operated. Critical realism is able to give a better perspective.

The Method of External Observation.—By quite general consent, Watson is regarded as the leader in this country of extreme behaviorism. The psychologists of other countries have hardly ever gone to the extreme position advocated by him and those who have allied themselves with him. There is good reason for believing that Watson went to this extreme under the mistaken idea that consciousness necessarily involved dualism and the entering wedge of supernaturalism. Also, we must remember that Watson began his career as a worker in the field of animal psychology and, as is obvious, introspection is not available as a method in that field.

But we are concerned for the moment with the method of external observation. The basic query is this: What is it that the psychologist can observe in a genuinely scientific way? The answer is, "Behavior." Even language is a kind

of behavior of a specialized type. To be scientific, we must have a science of the other-one; we must get beyond autobiography. Watson classifies behavior under four headings: (1) explicit habit-responses, (2) implicit habit-responses, (3) explicit hereditary responses, and (4) implicit hereditary responses. Methods have been developed for studying conditioned secretion reflexes and conditioned motor reflexes, also, for studying verbal responses. Into the detail of this work it is not our task to go. Suffice it to say that good results have been obtained which give insight into the functioning of man and other animals. Of the value of this work there can be no doubt. It is thoroughly scientific.[1]

A Combination of Methods.—The majority of psychologists are ready to use both of these methods, which, it is thought, should supplement one another. One point is sometimes obscured. It is this, that *all* scientific observation rests ultimately upon external observation and *agreements* due to this external observation. This agreement comes through language, which is a verbal affair which supplements the less delicate means of communication. But while language is used in physics, chemistry and biology solely as a means of communication and statement of external observations and their logical interpretation, in psychology it is used as a method of communicating by the subject to the experimenter the *experiences* which the subject has had, experiences which are supposedly personal to the subject, though of general import. These experiences are also supposedly relevant to the problem under investigation and supplementary to the observation of the subject's muscular behavior. That language-behavior is expressive of processes taking place in the higher nervous centers, processes which are in part conscious, is the assumption underlying this combination of methods.

It has been well pointed out that we combine these methods in everyday life to give an adequate meaning to such terms

[1] The student should look over the introductory chapters of Watson's *Psychology From the Standpoint of a Behaviorist.*

as playing, hating, attending. I am glad to be able in this connection to quote with approval from a writer with whose general philosophical position I disagree. "The concept of behavior, so we would deliberately and emphatically suggest," writes Hoernlé, "has precisely the great merit that it permits us to use the terms of ordinary life, the total meaning of which combines within itself the experience of the observer describing others and the experience of the subject expressing his feelings and thoughts. The meaning, *e.g.*, of 'playing' is derived hardly less from seeing others play than from playing oneself. Neither way of experience by itself is adequate or sufficing. One has to do or suffer a thing, in order to 'know what it feels like,' to realize it in terms of one's own sensations of movement with their attendant pleasure or pain."[1]

All but the extreme behaviorists recognize that the situation is of this sort. What they are opposed to is *mentalism* in a dualistic sense. Often, however, the swing of the pendulum is extreme before the adequate perspective is gained. We shall try to show that psychology has been brought face to face in an unprepared state with the problems of epistemology and with the question of evolution. I have tried to show that I appreciate how great these difficulties are. It would surprise me greatly if psychology got its point of view worked out quickly. If it did, that point of view would be of tremendous interest to philosophy.

Different Kinds of Behaviorism.—Many of the younger psychologists are favorable to the general idea of behaviorism because they recognize that it suggests a more comprehensive perspective than was associated with traditional psychology. It stresses the organism as the unit of reference and implies the categories of organic response and process. Consciousness and mind are a suffering and a doing of the organism. The traditional perspective of psychology was too dualistic. It suggested mind as a separate kind of stuff and was, on the

[1] Hoernlé, *Matter, Life, Mind and God*, p. 156.

whole, friendly to epiphenomenalism. It is felt to-day that a deeper analysis of the whole situation is necessary. The very notion of mind must be revised in the light of the idea of function, or process, and consciousness must be thought of as of the nature of a patterned *event* connected with organic functions.

Clearly, the term behaviorism is as yet equivocal. Only as the mind-body problem reaches a generally accepted solution will the significance of the term be agreed upon. In the meantime, four types of behaviorism are distinguishable. Their formulations are as follows:

(1) Facts of conscious experience exist and are capable of treatment, as distinct from behavior. The behaviorist is not interested in them, since they are irrelevant to his problems. This is merely *psycho-physical parallelism* with emphasis on the physical. A scientist who works from this standpoint accepts the traditional dualism of mind and body. It may be said to carry out Cartesian dualism. The categories of psychology are not re-analyzed in the light of an originative evolution.

(2) Facts of conscious experience exist but are unsuited to any form of scientific treatment. This is the common formulation of the behaviorist's position. Weiss, Watson in his earlier writings, and Yerkes favor this attitude. It may be called *methodological behaviorism.* We have here merely a matter of emphasis upon a new set of studies and a refusal to do justice to what the older psychology accomplished. Animal psychology is to the forefront.

(3) The supposedly unique facts of consciousness do not exist. An account of the behavior of the organism leaves no residue of pure psychics. Mind is behavior and nothing else. This is Watson's present position. It may be called *radical behaviorism.*

(4) Mind is a term for a certain level of organic responses and processes centering in the nervous system and finding expression in muscular activities. The total response can be

called behavior. This position can be called *synthetic behaviorism.* It is clear that, for this position, mind and consciousness are categories which psychology must add to ordinary biology to deepen and enrich it. Ordinary self-consciousness and introspection give data to psychology concerning the nature of mental responses. This is a monistic, evolutionary position.[1] It is to such a position as this that our own thought has been tending.

When one glances over the discussions by psychologists of the situation in their field, one is immediately impressed by the variety of positions taken. There is, first, the compromise position. Pillsbury represents this attitude very well. He writes: "These differences of opinion on theoretical points may very well be neglected in the development of a description of the mental life. After facts have been collected and laws formulated, the fundamental problems may be attacked in the light of these results."[2] From the point of view of science much can be said for this position. Things will clear up as more is known. There is, second, the view that there are two kinds of psychology which should have different names. The one might well be called behaviorism and the other psychology. It is even suggested that a more inclusive science to be called *psycho-biology* might be developed to bring together the results of the first two kinds. And there is, third, the position that psychological categories must be thoroughly explored and revised. It is, of course, to this third position that philosophy is attracted. By its very nature, philosophy is exploratory and interested in categories. In the next chapter, we shall examine the traditional mind-body problem, stating the usual positions taken and suggesting the proper perspective. At present, it is of interest to note that the drift in psychology is towards a denial of the validity of the traditional dualism. Of course, psychologists are prone to

[1] Part of this summary is taken from Lashley's articles entitled "Behaviorism and Consciousness" in the *Psychological Review*, 1923.
[2] Pillsbury, *Fundamentals of Psychology*, p. 7.

castigate philosophy as the cause of psychology's ills. Particularly to American scientists who know little about philosophy does this *alibi* appeal. The simple truth of the matter is that the problem psychology is here confronting is so basic that they should not be ashamed of being puzzled by it. But some pretty bold and basic suggestions are being made which should help philosophy in working out a theory of mind and consciousness. Let us always bear in mind that intelligence is a higher level than mere life. Should we not expect novel properties and characteristics? Psychology must work out its own salvation; but there is no reason why philosophy may not help it to find itself. A clear-cut epistemology and an evolutionary cosmology should be of considerable assistance to psychology.

A Current Paradox.—The epistemological standpoint at which we have arrived should aid in bringing order into the psychologist's outlook. It should help to determine what science should mean by such terms as 'subjective' and 'objective.' Neo-realists, pragmatists and behaviorists have been very much afraid of the subjective. It has meant to them a survival of the ghost-soul of traditional dualism. But surely there is a perfectly legitimate use of the term as meaning that which is bound up with the individual experiencer. It is a term which indicates the *locus* of certain events in which the psychologist is interested. Existentially, nothing is either objective or subjective; it just is.

From both the logical and the scientific standpoint it would be best to throw overboard this term, subjective, as misleading and ambiguous and to employ the term consciousness. Consciousness is real and must be given a locus in reality. Also, it must be the object of careful study. The only healthy thing to do, then, is to forget the traditional dualism of substances and start afresh from the facts. *May not consciousness be a complex of qualitative events in the brain rather than a unique kind of self-sufficient stuff?* If so, these events can be introspectively studied and correlated also with the behavior

of the organism, that is, its functioning, as this is externally studied through sense-perception? It is highly probable that psychology will work thus from both directions.

It is suggested that psychology has been the victim of three ills: (1) a bad epistemology or none at all; (2) the dualistic tradition; and (3) the atomic, mechanical view of both the brain and consciousness. It is in the throes of freeing itself.

Critical realism can, I think, solve a paradox which has troubled the psychologist. The paradox arose in connection with this question, What is the peculiar subject-matter of psychology? We find Titchener writing as follows: "It is the *same experience* all through; physics and psychology deal with the *same stuff*, the same material; the sciences are separated simply—and sufficiently—by their point of view."[1] But is this clear? It would appear that an idealistic type of epistemology is at work in this statement. As a matter of fact, physics and botany try to gain knowledge about physical processes and plants *by means of data of observation in experience and reflection upon those data.* The physicist is not trying to know about experience as a kind of stuff. But he must use data in experience and mental processes in order to achieve knowledge about things. What, then, does psychology study? What is its object? Surely the *process* of individual experience with all that it implies. And this flow of experience is always bound up with an individual organism. It follows that psychology does have a distinctive subject-matter. Now the striking feature of the situation is that this distinctive subject-matter can be studied by means of introspection, which is a sort of self-observation.

James Ward views the situation in the same way that Titchener does and, probably, for the same reason. His epistemology has caused the difficulty. "Paradoxical though it may be," writes Ward, "we must then conclude that psychology cannot be defined by reference to a special subject-matter as such concrete sciences, for example, as mineralogy and

[1] Titchener, *A Text Book of Psychology*, chap. 1. (Italics mine.)

botany can be; and, since it deals in some sort with the whole of experience, it is obviously not an abstract science in any ordinary sense of that term. . . . It is by way of expressing this that widely different schools of psychology define it as *subjective,* all other positive sciences being distinguished as *objective.*"[1]

But if the standpoint we have developed in this text is correct, psychology is no more subjective than any other science. It is really no wonder that the psychologists who think of their science as linked with biology object to such a contrast. The simple and ultimate fact is that all knowledge involves the activity of an observing and reflective organism which has experiences. And we must distinguish between the object of knowledge and the knowledge itself. All knowledge, *i.e.,* data, laws and theories, is within experience as a part of its content, when it is not latent. Now the distinguishing feature of traditional psychology was that this content and flow of experience in individuals was itself the object of knowledge. The only sense in which this object was subjective was that it was linked up with subjects or persons. It is not subjective in any metaphysical sense or in any logical sense. This kind of object, as real, must be linked up with the other kinds of objects which the other sciences deal with. And psychology as a natural science will tend to take a monistic, naturalistic position. It will want to fight free from such paradoxes as Titchener and Ward set up. And critical realism will maintain that it can do so. But, before it can do so, it must recognize all the facts. *It must realize that man is a knower and that knowing is a concrete process taking place in individual, intelligent organisms and that all the sciences up to psychology can turn away from this fact whereas psychology cannot but must face up to it.* And that is why psychology cannot merely take refuge in biology as the behaviorist wants it to do. It has new facts and new categories.

Another way of putting this same conclusion is to contrast

[1] Ward, Art. on Psychology, *Ency. Brit.*

it with Whitehead's view of Nature. It will be remembered that Whitehead feared that the assignment of sense-data to mind involved the 'bifurcation' of Nature. It does so if mind is something outside of Nature. And it is for the physicist, but only in the sense that the *field of the physicist* neglects those levels and characteristics of Nature which we have called biological and psychological. Nature is limited or taken selectively. But neither the philosopher nor the psychologist can admit for a moment that this selection is anything more than a division of labor. To the physicist, then, mind is outside of Nature; to the psychologist, it is not. Mind is a term, we have maintained, for individual, organic minds, an evolutionary level and product of nature, of which the physicist's mind is typical. To assign sense-data to such a biological mind is not to bifurcate Nature in any Cartesian sense but to locate mind in Nature.

In this discussion it should be clear how critical realism and evolutionary naturalism support and confirm one another. This coherence is in favor of both.

An Inclusive Definition of Psychology.—Let us now endeavor to interpret the task and outlook of psychology. It is continuous with biology but, while the biological sciences have used only extrospective methods, *human psychology* can add introspection or self-observation. In this way, it involves a supplementation of biology.

One of the interesting points in behaviorism has been its distinction between behaviorism and physiology. It is now pretty well agreed that behaviorism differs from physiology in stressing the response of the organism as a whole, or functioning, system. Watson has brought out this point very conclusively. "Physiology," he says, "tells us nothing of man's capacity to form and retain habits, nor of the complexity of man's habit organization."[1] Pillsbury puts it this way: "When behavior is modified, not merely by the physical stimulus and chance chemical conditions of the

[1] Watson, *Psychology*, p. 21.

organism, but also by the results of earlier behavior, we have the first beginnings of intelligence, and the organism offers material for psychology.''[1]

We may define psychology, then, as the *science of the conscious and unconscious processes essential to intelligent behavior.*

The older associational psychology thought of mind too thinly as a series of mental states or a mosaic of 'ideas.' The spread of a biological perspective plus the suggestions of Freudian psycho-analysis has made mind and personality something more permanent, more of the nature of a complex of systems. It is only in terms of the organism and its capacities that actual personality can be understood. It is the unity of the organism which must be the point of departure for interpretation.

We must, apparently, start with instincts or tendencies in the organism tuned to stimuli or situations in the environment and ripening with the growth of the organism. The dynamic character of such instincts may be called *conation.* Thus conation is the functional expression of those large, hereditary organizations which we call instincts. These instincts may conflict and seek, each in its own way, to dominate the organism. Thus conflict is characteristic of organic life. It is probable that, at a low level, such conflicts are felt and not raised to reflective consciousness. Certain tendencies are repressed because they are not victorious in the struggle to capture the control of the organism. But, gradually, impulses acquire meaning, and these meanings are raised to the level of conscious awareness. It is only at this plane that we have consciousness proper, the awareness of a field of experience. It is the level of reflection, of deliberation, of choice.

This way of approach to personality promises to throw a flood of light upon it. Personality is a growth, a complex organization of dispositions and tendencies, a moving equilibrium like life itself. We have habits, methods, repressions,

[1] Pillsbury, *The Fundamentals of Psychology*, p. 7.

inhibitions, facilitations, integrations. Personality rises and falls, integrates and disintegrates. There are those who cannot face reality and live in a dream-life. We have here what Freud calls "regression into the infantile." Others are brave and face life. These organize their tendencies and habits, deliberately repressing that which will not fit in and, perhaps, sublimating it by drafting its energy.

But how about mind and consciousness? These have been the supreme categories of past psychology. It is clear that, if the position I have been outlining as fairly characteristic of recent psychology holds, mind and consciousness *as substances* disappear. Mind must be thought of as a term for systematic tendencies and operations which have slowly come to pass in the organic world. It is a term covering memory, habit, association, reasoning, attention. It is a term for functions. We have here something which has developed with the needs and structure of the organism. It stands for motor-sets and action-patterns, for cumulation and organization, for instinct and for learning by experience.

But what about consciousness? We come to the deepest of all questions in cosmology. In the next chapter, we shall try to offer some suggestions which seem to be along the right lines. We must bring consciousness under the category of *event*. We shall suggest that what we call consciousness is a patterned complex of events intrinsic to the functioning of the brain-mind. In consciousness we are on the inside of these events; we *are* the events. It is not that we have knowledge of the time-order of these events from the outside as in science. Here, alone, we are on the inside of reality. And it should not surprise us to find that in itself reality is capable of quality. The colorless, logical pattern which science discerns in its necessary stress upon the order and quantity of things makes us too easily forget that this is but a *translation of the form of reality*. Reality has a content as well as a form. And it is this content at the evolutionary level of mind which emerges as *quales* with which we are acquainted be-

cause, as conscious beings, they constitute that field of awareness which we are.

In these matters we are at the heart of cosmology. We shall now examine the traditional views of the mind-body relation and conclude with an attempt to make clear the situation in which we human beings are.

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CHAPTER XXII

THE RELATION BETWEEN MIND AND ORGANISM

The Mind-Body Problem.—The last two chapters have raised problems of intrinsic philosophical significance, but they have also been of the nature of a preparation for a penetrative discussion of the traditional mind-body problem. The first chapter sketched the history of this age-old distinction and showed the transformations it has undergone and is in process of undergoing at the present. The second chapter aimed to introduce us to the concepts and perspective of contemporary psychology. The reason for this preparation is surely clear. Philosophy does not work in a vacuum nor, like the monks of Athos, does it contemplate its own navel in hope of illumination. It must immerse itself in the general facts and concepts of the sciences and, from that vantage-point, press on to an understanding of the categories of the sciences as these unfold. And this preparation has suggested to us that we are dealing with a high level of evolution in which organisms have developed methods, organs and functions of adjustment to, and control of, their environment.

This last way of putting it seems very simple, and behaviorists are quite convinced that the traditional mind-body problem is a *pseudo*-problem, that is, a problem due to a false way of looking at the facts. And it is quite apparent that there is a good deal of truth in this way of looking at it. Yet there is decidedly more to be said about the problem than this. In the first place, the behaviorist must explain what he means by mind and show that these complex integrations of *conditioned reflexes* of which he speaks accurately account for the operations of choice and reasoning that the human organism

performs. Is there not a system-formation and a process of selection which is hardly done justice to by the concept of conditioned reflexes? In other words, do we not again meet with the problem of levels in nature? Is not the mind an organization upon an organization?

But we have also seen reason to take the category of consciousness seriously and to accept the view that each of us has a private stream of experience in which we are on the inside of nature in a way to need explanation. The delicate question is to show how these changing contents are integral ingredients of mind and brain. Physical science has so accustomed us to think of physical systems in terms merely of quantities and relations that we are almost shocked at the suggestion that a physical system may contain a qualitative content. Let us remember that physical science can never offer us a glimpse of the stuff of the physical world, but can only work out structures, quantities and relations. In our consciousness we are a pulse of reality at this high level of organization and activity. But just how we are to perceive this, just how we are to harmonize consciousness and its characteristics with the characteristics of neural response remains a basic question. Unless this can be done, dualism will remain a living alternative. We shall find questions a-plenty here and of the most subtle and tantalizing sort.

Finally, let us recall that we have found much of radical behaviorism to be motivated by a dislike for traditional psycho-physical dualism. It would seem that such thinkers do not so much object to consciousness and introspection as to the view that consciousness is mysterious and apart from nervous processes. But many champions of introspection have much the same perspective. For them, also, the organism is the unit.

The traditional set of assumptions may be summed up in the term Cartesianism. It was supposed that the physical world consisted of something clearly alien to consciousness and entirely mechanical in its operations. By very definition,

there was a dualism between mind and body. It must be remembered that, for a long time—in fact, until recently—science took the general Cartesian view of the world in a fairly orthodox fashion. It did not admit the significance of organization, and it did not see that its type of knowledge had limitations. The mind-body problem was accordingly left by it to metaphysics with an inner conviction that metaphysics could occupy itself with it until doomsday without results. We have been suggesting that this outlook has been disintegrating through the very growth of science, on one hand, and the keener analysis of philosophy, on the other hand.

Solutions Offered.—We can readily divide theories of the mind-body relation into two classes, *viz.*,—dualistic and monistic. Dualistic theories accept the distinction between the material and the immaterial as corresponding to an existential division in reality itself. Our historical approach has given the setting of this outlook. Monistic theories represent endeavors to avoid this dualism. There are the older monistic theories and the newer ones. The older theories were either dialectical or else the expression of extremes, such as idealism and materialism. The newer type of monistic theory is developing rather gradually by making the notion of mind more concrete and organic and by taking a more evolutionary view of physical realities. The whole situation is being more carefully studied. Illuminating principles and categories are being achieved by reflection upon the facts instead of being assumed in an *a priori* way. The solution which we will favor will express this method of approach. Now that we have a clear-cut theory of knowledge and an appreciation of the fact of novelty in a physical world, a satisfactory monistic view should not be so hard to attain.

Dualistic Theories.—Dualistic theories divide around the question whether or not a causal relation exists between mind and body. There are two main dualistic theories, although there are varieties of these two. Since our purpose is to gain a clear idea of the mind-body problem in its fundamental

aspects we shall not consider mere variations on minor points. These often have only historical interest.

The older and more popular of the two dualistic theories is *interactionism*. Interactionism holds that mind and the physical world interact causally. *Thus it accepts two distinct realities and declares that experience indicates a causal relation between them.* The advocates of this position always maintain that it covers the facts more naturally than any other dualistic position. In sensation, we clearly have the external world affecting the body and, through it, the mind; while, in volition, the reverse is just as obviously the case. A pin-prick gives me a sharp pain and makes me feel uncomfortable. Here the body and its happenings affect the mind. My plan to read up upon the latest theories in physics causes me to drive down to the library to get out a technical magazine. Here my conscious purpose controls my body and brings about changes in its behavior. And if my consciousness is distinct from my body such expressions seem quite justifiable. The traditional outlook very naturally took on an interactionistic form.

Parallelism is the denial of interactionism. The parallelist refuses to regard physical and mental events as parts of one cause-and-effect order. So impressed is he with the difference between the mental and the physical that he finds it impossible to admit that there is causal interaction between them. He is led to hold that each order is self-sufficient and independent, even though they accompany each other so assiduously. Parallelism grants a *temporal correlation* of mental events and neural events but denies any more intimate relation.

Let us now examine these two dualistic views a little more in detail, considering what can be said in favor of them and what against. Suppose that we begin with interactionism.

Interactionism.—While the acceptance of a causal relation between mind and body is the defining characteristic of interactionism, we must not ignore the fact that some inter-

actionists conceive of the mind and of this relation more crudely than do others. We have seen that the mind was first looked upon as a ghost-soul of a fairly material texture. Probably the relation between soul and body was conceived vaguely in a sort of magical way. The soul had *mana* to do things to the body. Again, when the mind was later thought of as a complex of fire-atoms, no great theoretical difficulty was felt. It was a case of one kind of physical thing affecting another. But as the mind was more and more de-materialized and extruded from space, difficulties multiplied. How can that which is not in space influence and be influenced by that which is in space? Does interaction involve a meeting or coming together?

Let us examine a contemporary exposition of interactionism which is subtle enough to avoid all the grosser errors of earlier expositions. We can easily note its kinship with vitalism. Dr. McDougall writes as follows: "In a similar way we may describe a soul as a *sum of enduring capacities* for thoughts, feelings and efforts of determinate kinds. Since the word substance retains the flavour of so many controversial doctrines, we shall do well to avoid it as the name for any such sum of enduring capacities, and to use instead the word thing or being. We may then describe a soul as a being that possesses, or is, the sum of definite capacities for psychical activity and psycho-physical interaction, of which the most fundamental are (1) the capacity of producing, in response to certain physical stimuli (the sensory processes of the brain), the whole range of sensation qualities in their whole range of intensities; (2) the capacity of responding to these sensation-complexes with the production of meanings, as, for example, spatial meanings; (3) the capacity of responding to these sensations and these meanings with feeling and conation or effort, under the spur of which further meanings may be brought to consciousness in accordance with the laws of reproduction of similars and of reasoning; (4) the capacity of reacting upon the brain-processes to modify their course

in a way which we cannot clearly define, but which we may provisionally conceive as a process of guidance by which streams of nervous energy may be concentrated in a way that antagonizes the tendency of all physical energy to dissipation and degradation."[1]

It seems to me that we must admit these capacities which Dr. McDougall enunciates but the basic query is this: Can they not be regarded as capacities—partly innate, partly developed—of the nervous system? It is, again, the problem of levels in nature with new capacities as against the old dead-level mechanicalism. But let us consider the objections which seem very pertinent to interactionism.

The objection which science has usually advanced concerns the conservation of energy. For modern science, energy is neither lost nor gained but merely transformed. Yet here is the hypothesis: the brain-event acts upon the soul and so energy disappears from the physical world into an immaterial world. And, in volition, just the reverse happens. But such an open boundary of a physical system is quite opposed to the ideas of science. The quantitative form of the principle of causality is the energy equivalence of cause and effect, that is, the amount of energy, free and potential, in a physical system. We must admit, however, that we are dealing here with a basic generalization of science and not with an *a priori* truth—it is probable that there are no *a priori* truths. As a matter of fact, this influx of energy has never been detected by objective methods; and it is quite obvious to us that mental work requires physical energy gained by eating and drinking and breathing.

Another objection calls attention to the implications of this relation between soul and body. Each soul must be adjusted to its own kind of body, for the soul of a dog is surely not like the soul of a man. Whence come these souls? Why is it that they are influenced by brain-events? Do they remain latent when they do not have a brain to stimulate them? Do

[1] McDougall, *Body and Mind*, p. 365, first edition.

souls evolve step by step with the brain in the animal series? Descartes got out of these questions nicely because he did not admit that animals have souls. But the bio-psychologist of to-day could hardly take this position.

Another objection is usually formulated under the heading of inconceivability. It is difficult for us to get these two kinds of things in juxtaposition, as it were. And yet something like juxtaposition seems to be implied by causality. We seem to ourselves to have gained some measure of insight into physical processes, but we are non-plussed in any attempt to understand how a soul can regulate physical processes from outside. The contact of the two is like the thought of a round square. The idea, itself, is not self-contradictory; it is just vague and puzzling. Perhaps this fact means that our idea of causality has developed in connection with our interest in things so that the category of space is knit with it. Clifford's sallies express this outlook or, if you will, prejudice so well that one of them should be quoted. "When, therefore, we ask: 'what is the physical link between the ingoing message from chilled skin and the outgoing message which moves the leg?' and the answer is, 'A man's will,' we have as much right to be amused as if we had asked our friend with the picture what pigment was used in painting the cannon in the foreground and received the answer 'wrought iron.'" It is clear that Clifford thinks that the brain is a continuum of physical events.

Finally, interactionism, like vitalism, must postulate an agency peculiarly well informed about the brain and its paths. This agency must *know* what nerve to quiet and what nerve to excite. It must be like a pilot or a pianist in this respect. *The empirical self does not have this knowledge.* It must be given to something transcendental about which, by hypothesis, we know only that it has capacities to respond in certain ways.

We have raised the customary objection to interactionism. Let us now point out its assets. It has always been a protest against automatism and crude materialism. It has stood for

the efficacy of consciousness and the significance of deliberation and choice. Historically, this is to say much in its favor. It was not so long ago that both philosophy and science thought of nature as a one-level mechanical process in which *vis a tergo,* or external push, determined all that occurred. Mind and consciousness were classed together as an *epiphenomenon,* something which accompanied these pushings and shovings of particles but had no say in what took place. Consciousness was like a man carried on the back of a runaway horse. Taken in its historical setting, much can be said in favor of interactionism. We must do justice to many of its motives—though not, perhaps, to all—in any acceptable solution of the mind-body problem. This motivation of interactionism is frankly acknowledged by McDougall: "And it is just because we have found that mental and vital processes cannot be completely described and explained in terms of mechanism that we are compelled to believe in the cooperation of some non-mechanical, teleological factor, and to adopt the hypothesis of the soul."[1] Our comment must be this, Is there not a third possibility? Must we not analyze all our terms more carefully?

Parallelism.—Parallelism is the denial of a causal relation between mind and body. And it accompanies this denial with the acceptance of dualism.

There may be said to be two current forms of parallelism, the one *methodological* and the other *metaphysical.* Moderate behaviorism is an expression of methodological parallelism. It simply does not concern itself with consciousness or pure psychics, though it admits the reality of such events. Physiology tends to approach the mind-body problem from the same angle. It does not see how consciousness can be effective and assumes that consciousness is somehow distinct from the organism. Metaphysical dualism is the explicit erection of this separation into a philosophical theory. It is this theory which we shall now examine.

[1] McDougall, *Body and Mind,* p. 364.

The purest form of parallelism is found in *Occasionalism*. The Occasionalists, who were influenced by Cartesianism, saw the difficulties confronting interactionism and were led to deny that mind and body could directly affect one another. To account for a certain harmony, or correspondence, between conscious purposes and actions, they resorted to a theological explanation. Spinoza and Leibniz sought to account for the facts by such metaphysical doctrines as 'corresponding attributes of the one substance' and 'preestablished harmony.' Spinoza's position is best expressed in the *Ethics* and comes out in such statements as the following: "The order and connection of ideas is the same as the order and connection of things" and "Even as thoughts and the ideas of things are arranged and associated in the mind, so are the modifications of body or the images of things precisely in the same way arranged and associated in the body."[1] It is a correspondence of order between the elements of two attributes. Leibniz saw the difficulties and fell back on a basic rapport without a causal relation. So much for the early development of the doctrine. Suggestive as these ideas were, they were too much bound up with particular systems of philosophy to be very significant for science. The empirical movement forced their reformulation. Why should we consider mind and body as two parallel attributes of *one substance?* Or why should we postulate a preestablished harmony between mind and body?

Science and philosophy tended to leave these early formulations in the background and to think of consciousness and matter as two kinds of reality in which events occurred. These events were continuous in their own domain but never affected the other domain. This was a negative position. It restrained itself from speculative construction as much as possible, and tended to satisfy itself with the proclamation that, for every psychosis, there is a neurosis. Such concomitance is ultimate.

There are two main objections to dualistic parallelism. The first is, that the constant concomitance of psychoses and neu-

[1] Spinoza, *Ethics*, part 2, proposition 7 and part 5, proposition 1.

roses is a mystery—and neither science nor philosophy likes mysteries. If there is no existential connection between them why should the one accompany the other? The mystery becomes still greater when we realize that there is a deeper relation than mere concomitance between them. The idea of moving my head actually precedes the movement of my head. The second objection to parallelism concerns the point in which interactionism is strongest. Can we understand human behavior in terms of purely blind physical processes? Let us note that parallelism has usually been content to think of the organism as a mechanism. Do not meanings and plans so pervade conduct that it is inexplicable without them?

It is well to call attention to another point. Consciousness seems to come and go and to be unconserved. It has abrupt beginnings and endings. It does not seem, then, to be a self-sufficient system in the same way that the physical series is. If we try to supplement consciousness by a soul, there still remains the question why the soul emits consciousness in this intermittent way. Decidedly, parallelism is a position in unstable equilibrium and expresses puzzlement rather than insight. It is essentially the result of the traditional Cartesian extrusion of mind and consciousness from the physical world. Clearly we must challenge the whole set of assumptions which it reflects.

Epiphenomenalism.—Parallelism readily lapses into epiphenomenalism. Consciousness and mind are ineffective ghosts which accompany the changes of the organism. The body is an automaton, a machine which blindly passes from one condition to another. The chief article in the epiphenomenalist's creed is that the physical world is a *closed causal system*. It is not interfered with from outside.

Epiphenomenalism represents the outlook of the nineteenth century in science. It is a sort of hold-over from earlier speculation. Evolution was not as yet taken seriously for the physical world. The organism was held to be a mechanical system with no new capacities or modes of action. It was,

also, alien to consciousness. Thus epiphenomenalism was an attempt at a compromise between parallelism and materialism; and, as in all such verbal compromises, it is either parallelism or materialism according to the desire of the interpreter. The term, itself, is the expression of the philosophical eclecticism of Huxley who really did not know whether he was an idealist or a realist. Consciousness is a sort of phenomenon upon a phenomenon and yet might ultimately be the only reality.

Epiphenomenalism is often spoken of as involving a one-sided causal relation between consciousness and the brain. It is, then, not a form of parallelism but a form of materialism. As such, it is a witness to the truth of the assertion that parallelism is in a condition of unstable equilibrium and easily falls over to the materialistic side. Since we have already discussed materialism, we need not go over the ground again.

To one who accepts a dead-level, merely atomistic view of nature, the difference between the brain and other physical things is only one of complexity. Hence, unless some reason can be given why consciousness should be correlated with the brain rather than with, for example, the fall of water, the correlation is merely a brute fact which is irrational and puzzling. And the intellect with this outlook can see no inner connection between complexity and consciousness. For the nineteenth century, as for the eighteenth, complexity did not mean organization and novelty but mere numerical complication. The only difference between fifty molecules and one thousand was nine hundred and fifty molecules. Now in a gas, that *is* about the only difference; in a chemical substance, it is not. New combinations bring new properties.

Our conclusion is, that none of the dualistic theories are satisfactory. Each tries to express a truth but, in so doing, meets a counter-truth which it cannot do justice to. Both philosophy and science are working at present away from dualism to some form of monism. Mind and body must be

integrated in our thought just as they obviously are in actuality.

Monistic Theories.—We saw that dualistic theories postulated the existential distinctness of mind and body and differed among themselves on the question of a causal relation between these distinct realities. Monistic theories agree on the thesis that mind and body are *not* distinct realities, but differ in their interpretation of these terms. We shall discuss three types of monistic theory. All three are bound up with epistemology and with ultimate questions as to the complete nature of the organism. We shall call the first theory psychical monism, the second, the double-aspect theory, and the third, the double-knowledge theory.

Psychical Monism.—Psychical monism is a deduction from spiritualism, which, it will be remembered, is itself a deduction from idealism. If all reality is spiritual or mental, the reality of the body must conform to this one universal kind of reality. The spiritualist asserts that what the dualist calls the body and regards as distinct from mind is only a perceptual or conceptual symbol or appearance of something which is in itself mental. Changes in the physical world are phenomenal changes which indicate changes in this basic reality. There is no mind-body problem because there is only mind.

Panpsychism offers the simplest form of psychical monism. The brain is the symbol of consciousness. If personal consciousness is not enough, the panpsychist simply postulates more consciousness, unconscious consciousness, mind-stuff. Only in feeling are we in touch with reality itself. In fact, it is a fair sample of reality.

Now there may be a good deal of truth in this, and yet not the whole truth. Feeling is, undoubtedly, a feature of reality; but is it the whole of reality? Consciousness is so evanescent, seemingly so little conserved, that it scarcely strikes our reflection as being the foundation of the gigantic processes of the physical world. Prevent oxygen from being conveyed to the brain, and we faint and lose consciousness.

It is something unsubstantial, something qualitative rather than quantitative. It would appear that only the exigencies of a theory would lead thinkers to resort to the view that consciousness is the only reality.

On the face of it, consciousness is a changing unity of qualitative processes which we have good reason to believe expresses the temporary condition of the organism. It is not made up of unit-atoms called ideas, or mind-stuff, but is rather a functional field which reflects the organization of something which has grown up and developed in time and which we commonly call either mind or brain—though just what the relation of the mind to the brain is perplexes us. It would seem, then, that psychical monism plays fast and loose with consciousness and with scientific knowledge, and is rather the expression of an idealistic epistemology than of the actual terms of the mind-body problem. If we take consciousness at its face value, it does not seem to be a stuff nor made up of elements which have permanence. It is more of the nature of a qualitative flux. And this qualitative flux seems to be intrinsic to, and express, systems and dispositions which life has evolved.[1]

Panpsychism, we may say, was a position characteristic of the latter half of the nineteenth century. It expressed the influence of an agnostic realism, that is, a realism which was convinced that we know only phenomena and that we can penetrate to reality only by analogy. There is a *nature* of which we are parts. But, at this time, nature was not thought of in terms of a genuinely evolutionary view. *The result was the translation of consciousness into mechanical terms, into mind-stuff.* Make realism gnostic, as critical realism does, and take evolution seriously, and we obtain the view which seems to us the most probable answer to the old riddle. But more of this later.

[1] There is a full statement, and criticism of the older panpsychism in McDougall's *Body and Mind*, p. 160. For newer formulations, more in line with critical realism, see Strong, *The Origin of Consciousness*, and Drake, *Mind and its Place in Nature.*

The Double-Aspect Theory.—There have been many formulations of the double-aspect theory. The chief objection to most of them is their vagueness. They seem to swing between a position like Spinoza's and panpsychism. Mind and body are said to be like the two sides of a shield or to constitute one single process observable in two ways. The epistemology of all this is not very clear. As a monistic position which tries to do justice to both physical science and introspective psychology, its heart is in the right place. It faces up to the difficulties more than does psychical monism. But it has not got quite the right clue.

We shall begin with a statement by Höffding which swings between panpsychism and the double-aspect theory. "If it is contrary to the doctrine of the persistence of physical energy to suppose a transition from the one province to the other, and if, nevertheless, the two provinces exist in our experience as distinct, then the two sets of phenomena must be unfolded simultaneously, each according to its laws, so that for every phenomenon in the world of consciousness there is a corresponding phenomenon in the world of matter, and conversely (so far as there is reason to suppose that conscious life is correlated with material phenomena). The parallels already drawn point directly to such a relation; it would be an amazing accident, if, while the characteristic marks repeated themselves in this way, there was not at the foundation an inner connection. Both the *parallelism* and the *proportionality* between the activity of consciousness and cerebral activity point to an *identity* at bottom. *The difference which remains in spite of the point of agreement compels us to suppose that one and the same principle has found its expression in a double form.*"[1] This quotation shows that Höffding has completely sensed the problem. But the solution is very vague. What does he mean by one and the same principle in a double form? The influence of Spinoza is apparent.

Recently a psychologist has attempted to offer an empirical

[1] Höffding, *Outlines of Psychology*, pp. 64-5.

analogy for the double-aspect view. The outer aspect, the brain, is to the inner aspect, consciousness, as surface is to mass. "In the surface-mass relation one aspect of the change is perceived by the eye, the other aspect by the muscle sense. Similarly, in the neuroconscious relation one aspect is objective—it is perceived from without; the other aspect is subjective—it is the conscious experience of the living organism itself. . . . Changes of surface and changes of mass do not influence one another, neither are they independent. Just so the monodualist (the holder of the double-aspect theory) regards the activity of consciousness and the activity of the nervous system as neither causally related nor parallel. They constitute one single process, observable in two ways."[1]

The problem left with us is two-fold: How can we regard consciousness and the nervous system as constituting a single process? How is it that this process is observable in two different ways? It is to the answer of these two questions that the double-knowledge theory addresses itself.

The Double-Knowledge Theory.—The solution of the mind-body problem is being made possible by four things: (1) the recognition that mind is a developed system of dispositions and operations; (2) the clearer idea of the nature of knowledge; (3) the admission that there are evolutionary levels in nature; and (4) the recognition that consciousness is an ever-changing field of contents intrinsic to processes.

The view that mind is a developed system of dispositions and capacities came to the fore in the preparatory chapters. We saw that behavioristic psychology gains knowledge of that which controls and conditions the overt behavior of the organism. This control is mind. So defined, mind is the relatively permanent organization of habits and tendencies which enables the animal to act as a whole to stimuli and to adjust itself intelligently. In this sense, mind is a category which evolutionary physical science must recognize. But we saw that orthodox psychology teaches much the same thing.

[1] Warren, *Psychological Review*, 1914.

It points out that past experience somehow modifies the individual and determines what he perceives and does. It lays stress upon the instinctive foundation of the individual and looks upon the mind as something which grows and develops with the organism. The psychologist cannot understand what is given in consciousness at various times without assuming that dispositions and capacities exist which condition consciousness and are in turn modified by it. *This evolving background is the mind.* Thus the conclusion to which psychologists are coming is that mind is more than consciousness. We have seen that McDougall maintained such a view, but that he was led to call mind a soul because of his belief in animism and vitalism. This view of mind as a complex, or organized, system of dispositions, habits and capacities is quite separable from his dualism. Let me quote from another thinker. "Consciousness, as appears from our previous account, is a name for a state, an act, or a condition, in short for something temporary. . . . It will suffice us for the moment that we give the name of Mind to the permanent unity of which we conceive any given act of consciousness to be the temporary condition, act or state. . . . Conscious and unconscious operations then may be legitimately grouped together, and without prejudgment as to their ultimate nature the sum of them may be called mind. Mind then appears as that which has consciousness in the foreground while in the background it is the theatre of energies, of interactions, of stresses and strains, the play of which goes to determine the character of the scene by which the foreground is filled."[1]

Let us try to get our concepts of consciousness and mind as distinct as possible. Consciousness is a stream. It is continually changing. It is a function of attention, stimuli and associations. It is a more or less patterned complex of contents containing awareness. It is intermittent, for in deep sleep or a swoon it is practically non-existent. There seem to be in it levels which reflect levels of mental activity. There is

[1] Hobhouse, *Development and Purpose*, pp. 20-1.

no good reason to believe that these contents are entities which exist when they pass from the field of consciousness. Let us, therefore, call consciousness a *variant. This means that it is essentially a qualitative event rather than a stuff.* But consciousness is indirectly conserved. The student gains by his reflections and observations. Knowledge is a growth, and we always know more than we are aware of at any one time. A well-stored mind is no empty metaphor. Consciousness seems to sink back into the mind and leave a deposit. And if consciousness is a process this fact is not surprising. Each pulse of consciousness may be likened to a coral insect which, dying, enlarges the rock upon which it has lived. Memory and retention are, of course, the most overt indications of this positive modification of the individual's mind. It is obvious that we must not have a negative conception of the mind, as simply an abstract system of naked potentialities. The mind is complex and concrete, a growth of habits, adjustments, associations, tendencies. It is that which flowers into consciousness and is, as it were, fertilized by it.

Let us now bring to bear upon this conception of mind the definite view of knowledge which critical realism made possible. Knowledge by means of the data of external perception, that is, by use of the sense-organs and the methods of science, consists of a comprehension of the quantity, structure, relations and behavior of things. It can never be an intuition of the thing itself. Now it is this kind of knowledge that objective psychology gives of the mind. It is a study of *action-patterns* as these develop from an hereditary foundation. It is unfortunate that many people think of the brain as a mere complex of cells and do not appreciate its functional organization, the processes which are its functional side. But valid as this kind of knowledge is, it has inherent limitations. It can never afford a literal glimpse of the *content of being.* It can, therefore, never attain consciousness which is clearly a part of the content of the brain for each one of us. In consciousness, we must hold—and in conscious-

ness alone—we participate in the content of being, here the content of the brain as it functions. Those who have followed the argument of the book should not find it difficult to appreciate the situation in which man finds himself, nor should he find it surprising that man has been puzzled by it.

Our minds are directed most naturally upon outside things, and the categories of our knowledge are molded by that interest and direction. It is not strange, therefore, that we find it difficult to think consciousness correctly and to put it in its proper context and relations. Let us keep in mind the thought that consciousness is a structured event and not a separate thing or stuff. Perhaps we can convey this distinction best by calling it a *qualitative dimension* of a functioning system. And it is a qualitative dimension which apparently emerges with the type of organization and activity which we call mental. How far back something like mere sentiency goes we cannot tell. And did not this qualitative dimension with its subject-object structure arise, we could neither know things nor become aware of our own life. In our consciousness we are immersed in being at a particular place and time. This is the reason for the privacy of consciousness to which the neo-realists so much object. But privacy does not preclude the sort of knowledge which communication and analogical inference mediate. All that privacy precludes is sharing. I cannot *possess* your emotion or thought though I may have good reason to believe that I *know* what it is.

To call consciousness a qualitative dimension of the functioning brain-mind seems a good way of keeping before us that intrinsicality of consciousness to the brain-mind upon which our theory puts so much stress. The situation is so ultimate in these matters that we can but resort to metaphors. Were we to use Hume's metaphor of the stage, we must say that, by the very nature of the situation consciousness is the only element of the stage which is *given* because it is what we are *as conscious.* Of all else, we can only have knowledge by means of the characters in our consciousness. We cannot

look over our shoulder, as it were, and sense the existential bond of union of consciousness and brain-mind.

So much for the general standpoint of what we have called the double-knowledge theory of the mind-body relation. Its implications will become clearer when we examine the question of purposive action. And in that connection I shall study the question of the nature of the efficacy of consciousness. Let us remember that, if this theory is true, we must henceforth think of the brain in terms of all of our knowledge of it. We must not think of mind and consciousness as budding out of the brain like an ethereal story, an emanation or ectoplasm. It is the physical system, itself, which has evolved to a higher level and become deepened and enriched with its manifold integrations.

In the meantime, we must continue our investigation of originative and cumulative evolution by studying the social process. It is in the social process that *homo sapiens* has become a person and has developed all sorts of values and activities which indicate another open line of advance.

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CHAPTER XXIII

SOCIETY AND PERSONS

Society and Culture Emerge.—Strange as it may seem, it has taken mankind a very long time to realize the *naturalness* of society. Consequently, there is yeoman's work yet for philosophy at this growing point of science. In this chapter, we shall try to show that society is an integration of human beings which lifts these human beings to a higher level. Many questions will confront us, and we shall be led to make analyses of *social categories* in order to remove vagueness and obscurity. For instance, we shall try to understand the relation between the individual and the group, one example of the relation of the one and the many. What is the group? In what way is it more than a collection of individuals? Has it a mind and will of its own?

In all this, we shall seek to continue our evolutionary way of approach. Let it be noted that we shall be cooperating now with sociology just as in the previous chapters we cooperated with physics, chemistry, biology and psychology. We are nearing the apex of evolution as we know it, for we are now to study that Leviathan or mortal god, of whom old Thomas Hobbes wrote, the society in which we live and move and have our being.

When we remember how difficult it was for science to fit together lifeless and living things, we are not surprised that the social sciences have come to their own very slowly. The compromise adopted was for each domain to develop its own data, methods and concepts in the hope that sometime, after enough knowledge had been gained, these systems would link up. This was a wise course and the only one to adopt. Let

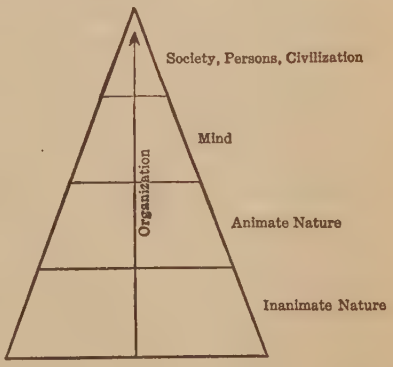
us recall those breaks which separated society and the physical world.

There was, first, the difficulty of understanding the origin and nature of life. If the physical is irremediably mechanical, must not life be a mechanical thing? And yet organisms do act in a novel way. There is metabolism, reproduction, selective behavior, adjustment. To meet this problem, we suggested that life represents an open line of advance in which creative organization brings forth new properties and possibilities. In place of abrupt contrast we introduced the idea of genetic continuity with the birth of novelties. We appealed to the category of time in order to bring together differences which seemed appalling in their greatness. And in our everyday experience we have good analogies for this appeal. Remark the difference between this boy just learning the keyboard and this gifted pianist who uses his instrument to bring out melodies which enthrall us. But we need not repeat our arguments for a perspective which mediated between mechanism and vitalism. Thus was one chasm bridged.

And then we came to the problem of mind. How can we conceive mind and consciousness as natural? By means of basic analyses, we gained a more adequate idea of these terms which led in the direction of their integration with the living organism. Epistemology helped us here as well as the idea of evolutionary novelty. We realized that in conciousness we were on the inside of a highly organized and functioning bit of reality. *We now saw that things with minds are native to the physical world under favoring conditions.* When such highly endowed organisms reach the level of human beings, they secure and deserve the name of *persons.* Thus another chasm was passed.

But how can we make society out of persons? Is society an organization of persons? It is clear that something of this sort is the case. It is obvious that another step in evolutionary novelty is before us, and a most interesting step at that.

Society emerges with persons. It looks as though evolutionary naturalism could be guided by its principles into this domain also and justify them by the comprehensiveness of their sweep. Sociology, which has been developing its concepts and methods for over a half century, if we date its beginning from Comte, can proclaim itself a natural science able to adjust its categories with those of the other natural sciences. In the present chapter, we shall try to carry through for sociology much the same sort of thing that we have done for the sciences dealing with the broad, lower levels of nature. We shall try to appreciate what is unique about it and, at the same time, see this uniqueness in its genetic relation to what preceded it. The following diagram may make the situation clearer:



The base of the pyramid stands for inorganic nature in its full scope; the next level for living things of all grades and kinds; the next, for mind or intelligence; and, finally, we come to social processes, to human beings in their social relations, to civilization. Nature diversifies itself. The higher must have the broad foundation of the lower on which to rest. By now the student should have developed a genetic imagination which can enrich this plain diagram by projecting into it the upward thrust of life.

The Primitive Group.—It is a familiar principle that thought moves most securely from the simple to the complex. While, in both psychology and sociology, there is another principle of equal standing which must also be heeded, *viz.*,—that we should pass from the best known to the less known,

it still remains true that a genetic approach from the simple to the complex helps our understanding of a field immensely. Now primitive groups are much simpler than the complex, social groups of civilization and, in connection with them, we can gain insight into the nature of social organization.

It is clear that the individual and the group are relative to each other. We may put it this way: the group selects the individual, and the individuals compose the group. The social group and the human individual grow up together. The human individual is impossible without the group, and the group is the cooperative expression of the individuals who compose it. In this way there is a reciprocal dependence between the social group and its members. It is the character of this relationship which we need to study and understand.

Let us note some of the characteristics of the primitive group. First of all, the members of the group are usually kinsmen. They belong to one race which has developed in a locality or migrated together. In early times the sense of kinship was very strong. The alien was seldom assimilated. If permitted to live in the community, he was nearly always a slave and not a free man. Adoption was allowed under certain conditions, but it involved some rite by which the adopted alien became a blood-brother or son. All this strikes us even to-day as natural and inevitable. Something very like it expresses itself in nationalism. In the second place, the members of the group felt themselves to be inseparable from the group. Its life was their life; its fate was their fate. There was, as yet, no sense of independent individuality and no desire for it. Man was through and through a social animal. His interests and habits were social. It is probably not going too far to speak of him as endowed with social instincts.

Of recent years there has been intensive study of various aspects of group life of a primitive sort. The religion, the magic, the customs, the technical achievements of this stage of development have been examined and theorized over. In

connection with the history of ideas about the mind, we pointed out the nature of animism. Workers in comparative religion, comparative ethics, anthropology, and psychology have gathered data and interpreted them. It seems pretty clear that early man felt more than he reasoned, developed customs, or folkways, in a communal fashion, and had a strong sense for the group. Groups, again, were suspicious of one another and even hostile.

The Human Organism and the Group.—It follows from all this that the group was not the result of any conscious plan. It was a growth due to the factors which had been working all along in the biological realm. We know so little of man's actual origins that we cannot trace the stages of his development. Undoubtedly, however, he was social from the beginning and belonged to a gregarious type of animal stock. And we mean by gregarious that the individuals of this stock enjoyed living together and added to this enjoyment some measure of cooperation. These organisms were attuned and sensitive to each other. It is probable that variations of a more savage and unsocial sort were eliminated because they were less likely to survive. Let us remember that the group is always stronger than the individual, and those who participate in it participate in its strength. We can safely conclude that the human organism became more and more interested in group-activities and in persons, and more and more sensitive to them. The stimuli to which it responded were increasingly of this sort. The individual was able to appreciate emotions, demands, group-actions, and almost spontaneously responded to what was being done around him. His habits were in large measure common habits.

In this account of the group, I wish to stress the part played by unconscious adjustment, by constant interaction in the face of situations and needs. The group is, in short, a growth after its own kind, an organization of a new sort, made possible by the capacities of the human organism, capacities which were themselves refined and emphasized by itself. I

suppose that one of the most striking witnesses to this development and interaction is language or communication. It is not too much to say that the group made language possible and that language lifted the group to a higher level.

The tremendous influence of language and communication is realized by recent thinkers. Thus Dewey sings almost a pæan in its praise. "Of all affairs communication is the most wonderful. That things should be able to pass from the plane of external pushing and pulling to that of revealing themselves to man, and thereby to themselves; and that the fruit of communication should be participation, sharing, is a wonder by the side of which transubstantiation pales . . . Events turn into objects, things with a meaning. They may be referred to when they do not exist, and thus be operative among things distant in space and time, through vicarious presence in a new medium. . . . Upon the whole, professed transcendentalists have been more aware than have professed empiricists of the fact *that language makes the difference between brute and man.*[1]

By means of language there can be conscious adjustment, education, the handing down of traditions, the spread of new ideas. The group would be impossible without it. Culture depends upon it.

The group is a new type of organization which appeared with the gregarious animals and awaited man for its full exploitation. We must not forget, however, that nature tried this method among the ants and bees with signal success. The query remains: What kind of communication do these more lowly groups employ? That is a question which the philosopher must leave to the comparative psychologist.

In the human group, held together by mutual needs and affections and capable of communication, we have the slow rise of culture. Do we not have here a new open line of development reared on the open line represented by life? To appreciate its character and possibilities is to realize the

[1] Dewey, *Experience and Nature*, ch. 5, *passim.*

naturalness of society. The basic processes underlying this social development are increase of population, discovery, culture-contacts and division of labor. Fortunately, we have ample historical material to illuminate the general features of this social growth. The advance to what we call civilization was very slow at first, millenniums being taken for a single step ahead. And then gradually in certain favorable regions like the great river valleys consolidation began and nations arose. Writing, art, temple-worship, administration, commerce, social classes, appear as complications and achievements. It is the group which advances and retreats, adjusts itself to conditions and explores their possibilities, wars with other groups, succumbs or conquers or makes commercial treaties. History has dawned.[1]

What is the Group?—Philosophy deals primarily with the basic concepts and principles of a field rather than with the concrete details. We must, therefore, leave to social psychology, sociology and history the study of actual groups in all their immense diversity. Few fields are more interesting to the human mind than this survey of the characteristics and eventful career of human groups. Man is fascinated by man. Who does not like to read of Egyptian pharaoh, Chaldean priest, Assyrian conqueror, Greek explorer, Roman administrator, Tartar, saint, monk, scientist, inventor, lover, poet? But this immense wealth of human life, which fills the ages, raises certain basic problems upon which we must now focus our attention. What kind of an entity is the group? How is the individual person related to it? We must see them in their relations.

We often hear it said that society is an organism. Is this true? Or does it simply express our paucity of language?

The problem here is to realize the likenesses and differences between a literal organism and a society. An organism is a bio-chemical organization which has a definite size and con-

[1] The intimate relation between history and geography is being increasingly realized. See, for example, Newbigin, *The Mediterranean Lands.*

sists of differentiated tissues and organs integrated in a specific, and individual, economy. It is a physical thing of this evolved kind. It grows, it adjusts itself to its environment, its parts are interdependent. What is a society or group? It is an integration of gregarious animals of high mental capacity in terms of their *reciprocal responses. Clearly, a society is not a physical thing, but a peculiar grouping of physical things.* It is this peculiar grouping which we must understand in its nature and effects.

Perhaps an analogy will make the situation clearer. We saw that mind is not so much a thing as a process. Or, to put it still more exactly, mind is a level of action of a highly organized thing. In like manner, we can speak of society as a level of action of gregarious, intelligent things, a level of action which develops in time. It is this level of action which involves large numbers of intelligent organisms in reciprocal response, which the sociologist seeks to understand. Another way of putting it is this, that the grouping of individuals in a society is a function of their nature and interactions and that both their nature and their interactions are in part an effect of the group. The group is, then, something which can be understood fully only historically, or genetically, just as we have seen is the case with an organism. And what we call *human personality* is, itself, relative to the group it is fostered by it, made possible by it. In short, society is an organization of persons but is not, itself, an organism. And this simply means that society is a kind of organization which presupposes intelligent organisms, a level made possible by the nature of its constituents which yet carries these constituents themselves to a higher level. Should we not expect novel properties at this new evolutionary level as we have found them arising at each level below? As a matter of fact, such novel properties are undeniable. We find them and the new categories they involve, in plenty. The number of them is tremendous—government, religion, wealth, justice, art, etc. The general characteristics of these we must al-

study in later chapters in order to appreciate the distinctly human level of reality.

To conclude, a society, or group, is not a physical thing, but a new kind of organization depending upon, and expressive of, the capacity of the human organism. We may call this capacity the *social nature* and *intelligence* of the human organism. Another way of putting it is this, that a society is a *new kind of thing.* This is no longer a physical integration in the mode of life, but a mental integration in the way of intelligent response and modifiability. A society is, in other words, a complex of modes of behavior on the part of human beings due to the way in which these individuals have affected one another. These modes of behavior are adjustments and inventions which are the expression of what may be called group response. Thus society is a mentally mediated and historically developed integration of human beings which finds expression in cooperative, or joint, behavior and in personality. To make this concrete, translate it into political activities, economic activities, religious activities, social activities. Human organisms are, as it were, caught up into a complex of activities which are a function of needs, interests, intelligence, and numbers. It is for this reason that a society is externally, or numerically, a sum of individuals, while it is actually a web of reciprocally determined behaviors which can be understood only in terms of what the sociologist calls institutions. It is this, I think, that the abler psychologists mean to-day when they call society a psychological, rather than a biological, phenomenon.

Has Society a Mind?—We have decided that society is not an organism but an historically developed, and mentally mediated, organization of human beings. Have we a right to say that this group-organization, which we call society, has a mind? It is clear, I take it, that we can say at once that it does not have a mind in the same sense that an individual human organism has a mind. Society is mental in that it depends upon minds and is an expression of minds, but

it does not have a mind as a human body has a mind. Actual thinking is done by the individuals who compose the group, but this thinking is stimulated by a realization of how others are thinking and acting and by knowledge of the character of group-actions. Persons affect one another in the most complicated ways; and we react to groups as well as to individuals. *It is this quivering interaction according to definite methods of communication and behavior which we must appreciate.*

Another way of putting our conclusion is to say that society contains *cooperative thinking* which is necessarily more than the thinking of any one individual or the thinking of any number of individuals in isolation. The citizen participates in the thinking that goes on in society. A political campaign offers a good instance of such participative thinking. Managers present the issues, newspapers laud the one party and heap criticism upon the other, individuals argue, a few think seriously about the whole situation. Social thinking is, then, a complex of interacting thinking.

There are two kinds of social units which we should contrast. The one we can call a mob; the other, a deliberative body. In a mob, suggestion and sentiment predominate in social interaction. People *feel* together. In a deliberative body, individuals try to assist one another to think clearly about questions. Here we have cooperative thinking at its best. And the sense in which society has a mind is evident. It does not have a mind, above and beyond the minds of its members, which is just one more individual mind; rather its mind is the interaction of individual minds and depends upon their quality. This view fits in with our conclusion as to the actual nature of a group. There is a new kind of organization which leaves the units, human beings, a relative autonomy. It is a mental organization rather than a physical organization.

The topic we have been discussing has often been broached in the form, Is there a *social consciousness?* Does it not seem

quite obvious that there is no social consciousness if we mean a field of consciousness with definite contents and perspective attached to a thing called society? Society is not a thing in this sense nor does it have a sort of super-consciousness. We have seen that contents of consciousness are correlated with mind-brain processes; and where is the mind-brain of society? And it is because we think that consciousness and a mind-brain are inseparably correlated that we tend to refuse a mind to society. Where there is a mind, we feel, there must be consciousness. And where there is no consciousness, there cannot be a mind.

We are thus brought back to our previous conclusion that a society is a new kind of thing with novel properties and characteristics. It is a cooperative thing rather than a physically unified thing. Thinking runs through society because of the capacity of its members and this thinking is conditioned by society. Social thinking is joint thinking.

The Relation between the Group and the Individual.—Just because it is difficult to grasp clearly what a society is, there has often been much misunderstanding in regard to the relation between the individual and the group. In our own day, the doctrine that society is a mere *collection* of individuals has not been entirely absent. The other extreme position is that the individual is nothing apart from the group, that he is essentially an organ of the group. Let us try to work out the implications of the position at which we have arrived and compare these implications with the facts of social life. We will, I think, soon realize that the first extreme has not realized what society is and that the second extreme has thought too much in terms of biology and has not done justice to the actual character of a society.

To view society as a mere collection of individuals is to take a purely numerical position. It would be like counting the cells in the brain and saying that the brain is a collection of cells. Both mistakes would be due to a disregard of the

fact and significance of organization. To number things is to take them as units for the purpose of counting, even though they are actually related in intimate ways. To take this external view as adequate would be to turn our backs upon the whole basis and meaning of evolution. Clearly society is not a mere collection of individuals, for it is these individuals in interaction according to historically determined methods and patterns.

On the other hand, to assert that the individual is a subordinate part of society having its specialized rôle to play in the economy of the state is to carry over into society the structure of an organism. It is to forget that we have in society a new kind of thing expressive of the mental capacities of its members. Only if it can be proved that rigid control and subordination are for the best can we rightfully advocate this type of organization in society. The point is this, that the peculiar structure of *a* society as against the general nature of society is a matter of social growth and choice. In itself, society does not involve any mimicing of the type of organization which we find in the organism. A society can be very loosely organized and very little differentiated.

The actual relations between individuals in a social group are determined by the historical development of that group. Investigation has shown that primitive groups are closely knit together but that there is little social differentiation as yet. Group solidarity and collective responsibility are features of this stage. The individuals seemingly feel and think much alike and hold themselves to be of one blood. There are traditions, beliefs, rituals and practical technique. The point to bear in mind is, that none of these things are thinkable apart from the common life of the group. They are group products. They are inseparably connected with that new thing which the group is. It is in the new setting and situation produced by these things that the individual lives and moves and has his being. The individual as a

member of the group is, himself, a social product. He knows and feels this.

And, as time passes and the group develops along many lines under the spur of increase of population, invention, intellectual growth, war, contact with other cultures, etc., there arise classes and occupations which, once more, differentiate the individual. The social function, or place, in which the individual finds himself controls his concrete and specific relations to other members of society and his activities. The growth in complexity of society means a corresponding growth in variety of human life. Now the modern mind with its sense of history is very well aware of this expansion and differentiation of society. We read of the various medieval types, monk, priest, peasant, noble, clerk, townsman; of the life of the time of the Renaissance in Italy; of the sailors, factory-workers, miners, artists, business-men, politicians, etc., of the present. All these types in their individual exemplars are creations of the historically developed group. The incentives and knowledge and needs which have impressed them, or attracted them, are resident in society.

There are many tendencies or forces at work in society. First of all, of course, it must adjust itself to its environment. And it does this both actively and passively. This is a secular process always at work. Then there are the influences exerted by the institutions which have slowly established themselves. Finally, there is the pressure constantly springing from *personality*. Human organisms have the capacity to achieve personality under the education and constant suggestion exercised by the life of the group. In a rich society—I mean a society rich in knowledge, art and social sagacity—the individual becomes rich in content and activity. And this richness of life makes him, in turn, a center of initiative and creation. He becomes an individuality, something dynamic and influential.

It is the task of political science and sociology to study

various phases of human, social development. In this field, also, they have found to the full the working of evolutionary processes. Language, government, industry, religion, art, science, all these are *impersonal growths* whose life exhibits the nature of the social process. The time-dimension is all important. Families, nations, races are products of the cumulative effect of incessant changes and adjustments. Heine is a product of Jewish race, German tradition and French suggestion. Milton is a poet of aristocratic puritanism. Lincoln is a product of the meeting of American pioneer life with culture. These are the processes and conditions in terms of which, alone, we can understand human life. It is clear that we have here a super-biological level.

In What Sense is Personality a Social Product?—We cannot hope to draw a hard-and-fast line between what a human being is by nature and what he is by culture. The biologist is inclined to stress 'nature' in his estimation of human life, while the sociologist points out the significance of 'nurture.' That each individual has biological endowments, or possibilities, seems to me undeniable. In a general way, the limits of his activities are set by his organic texture. But the particular character and level of his personality is a function of his history, that is, of the actual way in which he has lived. And the way in which he has lived is profoundly affected by the social stimuli which have come to him. It is to social situations and demands that he adjusts himself from day to day and from year to year. There is interaction, suggestion, new ideas, new activities. In short, personality is a complex growth which reflects the social setting of the individual. Only in this way can we understand the differences between the adult Englishman and the adult American, the adult Frenchman and the adult Greek or Roman of the past. Civilization and culture are social categories, not biological ones. This new level of evolution is conditioned, and made possible by, the bio-psychological level,

but is not simply reducible to it. We have here a new complex of processes which brings new realities to birth.

But the best way for any one to realize his indebtedness to that historically developed complex which we call society is to trace the influence upon his own life of his social surroundings. Parents have, perhaps, come first. To these he adds the type of life lived in the village or city in which he was brought up. Some striking personality may have called out reactions of an intenser kind, may have aroused interests, given a new bent to his life. And then there are the adjustments to others constantly going on. Bit by bit, character develops, ideals and ambitions appear as controlling forces. And if his life has gone higher in a cultural way, think of the tremendous effect which great writers, great artists and great thinkers have had upon him. The stuff of his life is there in an organic way, but it is canalized, refined, differentiated by this continuous process which is life in society.

There is one mistake which we must not make in all this. We must not think of the development of personality as a passive thing. It is not the stimuli by themselves which mould us but our *responses* to the stimuli. To respond many times in one way is to become a certain kind of person. And there are many social stimuli which large numbers ignore and which do not, therefore, enter into their lives. I presume that we can express this selective relation between individuals and social stimuli by *opportunity* and *interest*. To some, the opportunity of responding intensely and long to certain kinds of things and activities is denied. Not every boy with an artistic temperament can go to an art-school or travel abroad. He may not even have the time to try out his own impulses in a systematic way. Again, interest is often lacking. These things may not appeal to him. We know that many students, so-called, can be exposed to intense thought and be unaffected by it. They are not attuned for some reason. Was there something lacking in home in-

fluences, in social conditions of the general type which we call the social atmosphere, or in innate temperament and trend? We must hold fast to the idea of process, of interaction. Individuals cooperate with social influences and what we call personality is the result. We may, I think, rightly say that, in this sense, personality is relative to the social group. A wild man would not be a human being in any other than a biological sense. It has taken untold generations to make what we are accustomed to call a gentleman. I do not mean this in any class sense but in an ethical and æsthetic sense.

Human Consciousness a Socially Conditioned Consciousness.—Now that we have fully appreciated that personality is unthinkable apart from the setting of society, we are ready to understand that an individual's consciousness is conditioned by its relations. Human psychology is, in a very real sense, always a social psychology. Yet there are distinctions to be made if we are to avoid confusion.

It will be remembered that we decided that society could not rightly be said to have a personal mind although it was a mental kind of thing. Society, we saw, is an historically developed organization of persons. But it is not, itself, a person because it is not a physically integrated thing with a unified mind. It does not have a will which moves individuals as my volition moves my arm. We decided that we have in society a new kind of organization of a looser sort which depends upon the development in its members of a social sense expressed in awareness of the group and in sympathetic cooperation. Granted this development, we can understand the secular growth of societies which outlive this individual and that and contain generations and their products. This ever-flowing tide of socialized life into which the individual is born and by which he is profoundly affected is an organization which does not depend for its existence upon him. Before I was, it was. After me, it will go on much as before. We all learn to realize how small and temporary a part we

are of this system. But we are also aware that this system could not exist apart from its members and their capacities.

Just as our personality is conditioned by society, so is our consciousness. The ideas I have in mind at present could not have arisen had I not been trained as a member of society. I could probably have seen as well, and heard as well, all the sights and sounds of inanimate nature, but I would not be thinking of patriotism, science, internationalism and religion had it not been for the actions and suggestions of the group. The contents of my consciousness are socially controlled. It is for this reason that I think of literary movements and of economic conditions, of pragmatism and of community funds. Communication by language is an essential agency here. The objects of my thought are social objects, persons acting together, institutions, schools.

But the mistake has sometimes been made of believing that, because I think of social objects and because the contents of my thought are socially conditioned, my consciousness cannot be my consciousness but must be socially owned. Surely this conclusion does not at all follow. My consciousness is the expression of my personality, that is, my developed, trained and functioning organism; and it is *existentially* as integral to that organism as is my eye or my hand. My consciousness is social only in the sense that its contents are conditioned by, and reflect, the situation in which I live and move. The new level cannot so basically contradict the facts of the level which conditions it.

Finally, it is essential that we realize that self-consciousness is a mental level which is made possible only by social interactions. The individual becomes conscious of himself as he becomes conscious of other people. He interprets himself in much the same terms as he interprets others. The whole range of mental development of the individual which lifts him above the brute in range of thought and interest is, as we have seen, socially conditioned. In a very real sense, we are what we are interested in. The range of our mind

is an essential characteristic of it. Psychologists have become quite aware of this fact, and it is now a commonplace of philosophy, psychology and sociology that we become aware of ourselves as we become aware of our interests, relations and ideals. Bit by bit, by trial and error, we also become aware of our capacities and their limits. The self is a center of actions and relations as well as of knowledge and of feeling.

It is through such activities as these which we have sketched above, in primary groups of the playground and later in the more complex relations of love, sex, business, art and contemplation, that personality is both achieved and made the object of consciousness. At the period of adolescence this awareness of the self deepens. We brood, compare ourselves with others, set up individuals as heroes and ideals. We seek to know this personality which has been growing up in this organism of ours. It is a difficult and lifelong task. In this old civilization of ours we are guided by the models which others have set for us. Art, as the field of self-expression, is peculiarly enlightening. It may be that Rembrandt has aided us, or Rousseau, or Heine, or Matthew Arnold, or Whitman, or Browning. To explore ourselves and the world, to realize curious possibilities and push back horizons, it is in such endeavors that personality grows. Habit, alone, or concentration on mere living or making money leaves sealed this more delicate and spiritual play and growth of the personality. The people of an old race bear on their very faces the imprint of these more subtle endeavors and experiences.

Conclusion.—We have tried to show that, when properly understood, it is quite devoid of paradox to hold that society is natural. Society is a term for persons in developed and differentiated relations which are either temporary and informal or fixed and formal. Fixed and formal relations are usually called institutions, and the history of these can be in large measure traced. In these relations, persons are called members of society. It is clear that a society does not depend

upon any one individual, though it does depend upon individuals taken collectively. The level which society has attained in complicated and differentiated states we call civilization. These civilizations differ markedly from epoch to epoch and from region to region. Few things are more fascinating than to study and compare them. While recognizing the relativity of personality to society, we hold that growth and summation must focus in the human organism. Mediocre individuals can never sustain a great society. Moreover mere numbers must not impress us. Vast oriental empires could exist at a social level far below that of little Athens. And a commercial and industrial civilization may easily crush to death that finer flower of expression and contemplation which struggles into life here and there within it. We saw, finally, that there is no adequate reason to assign a personal mind and will to a society. A society is clearly not just one more person to be added to its members. And yet to each individual who must adjust himself to groups, these groups take on the semblance almost of super-individuals. Their behavior is merged and their members easily become anonymous. It is this merging and harmony of action in terms of groups which stands back of such terms as public opinion and the social will. *To think delicately here is to realize the mental texture of society without giving a society either a mind or a consciousness.*

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CHAPTER XXIV

THE THEORY OF LEVELS AND BASIC POINTS IN COSMOLOGY

A Crucial Point in Cosmology.—We have been advancing from level to level in nature with what has appeared to us a large measure of success. While we have encountered serious problems, we have yet seemed to gain insight and to achieve a point of view which raised us above the very vague controversies which have been traditional in these fields. Our outlook has, on the whole, been empirical. Ours is a very complex world whose constitution and inner variety must be worked out piecemeal. It is this that the sciences have actually been doing in the measure of their ability. It follows that our concepts and principles are things achieved rather than things to start with. Just what does life turn out to be? What is matter? What exactly is mind? How should we think of society? The answers to these questions come only at the end after a comprehensive survey has been completed and some fairly intensive thinking has been done. The best we can do in all these matters is to make the most satisfactory hypothesis we can, the hypothesis which seems to comprehend the facts and to introduce harmony into the largest number of principles. The hypothesis which has appeared to us most illuminating is that of evolution. It is the assumption that there is novelty or origination in the world, that there has often been something new under the sun, including—if I may use an Irish type of witticism—the sun itself. This thesis has been given various names of much the same import: creative evolution, emergent evolution, epigenetic evolution, originative evolution. Lloyd Morgan

formulation of the thesis is typical: "The orderly sequence of natural events, historically viewed, appears to present, from time to time, something genuinely new. Under what I call emergent evolution stress is laid on this incoming of the new. Salient examples are afforded in the advent of life, in the advent of mind, and in the advent of reflective thought . . . But if nothing new emerge—if there be only regrouping of pre-existing elements and nothing more—then there is no emergent evolution." [1]

And here we have the crucial point. For many generations the scientific ideal was the so-called mechanical view of the world, what I have called a dead-level view of the world. To-day the struggle is on between these two sets of assumptions. What does each imply? Which seems best to accord with the facts? Let us contrast the two positions.

We have hitherto dealt with emergent evolution in the concrete. We are concerned more now with its *logical structure,* but I do not think it will be amiss to summarize the historical perspective it opens before us.

The general plan of nature which presented itself to us with this perspective we likened to a pyramid of a tier-like construction. A process of creative organization led at each stage to the advent of gradients or levels above. Each new level depended upon the energies and conditions of the lower level and was adjusted to its wide-spreading foundation. Matter, itself, was evolved. Then came the earth with its waters, its salts and fertile earth and, giving it radiant energy, the sun. Then little by little came life reaching upward to more complex forms. The story is a long one, not completely deciphered, for whole chapters are missing in the records. Slowly life lifted to mind, the human mind being the latest and highest to appear. Pre-history gave way to human history and society with its fruit, civilization, began to dominate the surface of the earth. Something of this sort seems to be the unavoidable reading of the facts

[1] Lloyd Morgan, *Emergent Evolution,* pp. 1-2, abridged.

which science has collected. And the advantage of it is that it explains the co-existence in nature to-day of things so different as minerals and government, the stormy ocean and the human mind which contemplates it and sees in it beauty and destruction. The old persists while the new develops with effort within it. In this regard, evolution offers us the spectacle of the differentiation of nature through its temporal dimension. And this temporal differentiation is spread out in space in the variety of co-existing kinds of realities.

But what is the logical structure of such a view? It clearly involves a *hierarchy of behaviors* reaching from the simple and more general to the complex and more specialized. Chemical laws cannot be regarded as deducible from the general laws of motion, for we have entering here the new factor of the actual structure and constitution of the various compounds. And in biology we have organisms which are constituted by the organization of chemical systems into systems of a higher order. The laws of biology cannot, therefore, be deduced from the laws of chemistry. For each level, laws must be *discovered* rather than deduced. The task of science is, for this outlook, the discovery and arrangement of the laws of nature in an ordered hierarchy. Let us remember that scientific laws are our human formulation of invariable correlations between events or between quantities obtained by measurement. They give us knowledge of the processes and relations of things. The evolutionary thesis would hold that things of different orders behave differently and that the laws which formulate this behavior are not deducible from one another. This conclusion is frequently expressed by saying that *the laws of nature form a hierarchy in which the different levels are discontinuous.* This logical, or deductive, discontinuity, does not at all conflict with the genetic continuity of orders of things in nature. But it does mean that there are 'junctures' in nature at which critical arrangements occur with the origination of novel

properties. Genetic continuity is not smooth but mutative, as it were. What nature does we must accept. Knowledge is an affair of discovery. For this attitude, S. Alexander and Lloyd Morgan, two very able English thinkers, have an attractive phrase. We must, they say, accept these mutative junctures with "natural piety." So much for the logical structure of the evolutionary view.

But it is time that we examined the classic view of nature which has tacitly ruled the sciences until recently. It is really impossible to appreciate the strength of this classic view apart from some knowledge of its rise in the seventeenth century and an appreciation of the outlook to which it was then opposed. In the chapter dealing with the nature and origin of life, we indicated the general character of this early conflict and pointed out how distinctly emotional it made the controversy between mechanism and vitalism in biology. There is really very striking agreement among philosophers who have given their attention to this controversy on one point, *the vagueness of the use of the term mechanism.* It will be remembered that we criticized Professor Pratt's defense of metaphysical dualism on this very point. It is too easy to oppose mechanism to teleology in a sort of blanket way.

Broad, one of the ablest of the younger English philosophers, has undertaken to analyze the meaning of mechanical explanation. He points out that there are two distinct questions involved in the mechanism-vitalism controversy: "(1) What precisely do we mean by a mechanical explanation and how do we suppose it to differ from any alternative kind of explanation? and (2) Can the phenomena dealt with by biologists be fully accounted for mechanically in the sense defined?"[1] Now it is clear that the first question is the prior one, and one which demands more than biological training. And it is unfortunate that the controversialists have

[1] Broad, *Aristotelian Society Proceedings*, 1918-1919. Mechanical Explanation and its Alternatives, p. 86.

seldom undertaken the task of telling us what they meant by mechanism. Driesch, we saw, was an exception.

Now precisely the same problem of the satisfactoriness of mechanical explanation and its meaning breaks out in chemistry, as we have seen. The laws of chemistry are not those of pure mechanics, that is, laws of motion. The actual situation is rather of this kind: scientific explanation tends to substitute for macroscopic phenomena, that is, for the things we see, microscopic phenomena like atoms and ions. And then the theory is easily made that these particles behave in accordance with rigid mechanical laws. As a matter of fact, they do not. Certainly, it has never been proved that they do. The laws of chemistry are empirically discovered, and they are not deducible from the laws of motion. Pure mechanism assumes qualitative homogeneity and simple geometrical relations. It is an abstract construction rather than something discovered. To assert that all physical processes are in themselves merely mechanical re-arrangements of microscopic particles is a bit of pure dogmatism. As Broad puts it, "We perhaps pay Nature too high a compliment by assuming it *must* be as logically beautiful as we can imagine it *might* be. We may admit with Mr. Dombey that 'Nature is a highly respectable institution,' but we need not stake our faith in science as its being so terribly respectable as that mathematical Mrs. Grundy—pure mechanism—demands."[1]

A. E. Whitehead has put the logical situation of science very aptly in the phrase: "Seek simplicity, and distrust it." Why should nature be simple? Professor Lovejoy speaks of science's millennial dream of unification and reduction of all special laws to a few, general ones and its disappointments. "To the philosophic looker-on," he writes, "these disappointments are not surprising; for he remains mindful that a belief in the ultimate unifiability of natural laws has no cogent logical grounds. 'Seek simplicity' is a maxim born

[1] Broad, *ibid.*, p. 109.

primarily of our needs and ambitions—and most of all of the need for intellectual economy characteristic of such limited and short-lived creatures as we are.''[1]

Mechanism versus Design.—Let us now try to apply this analysis of the character of natural processes to the old controversies which still puzzle popular thought. Surely, this is one of the duties of philosophy. We have endeavored to view nature as a hierarchy established by creative evolution and to maintain that such an outlook fits in more harmoniously with the facts than the rather *a priori* view so long held as the scientific ideal. Does this position enable us to interpret, and deal justly by, the traditional opposition between mechanism and design, or external teleology, in nature?

We shall find it very interesting to note that this opposition was at first of a dominantly theological type. Design and teleology stood for creation and providence, while mechanism stood for a sort of atomic naturalism. Here we have another instance of those sharp and harsh antitheses which have ruled and, at the same time, puzzled and bewildered the human mind. It is probable that problems set in this way, that is, falsely, have done more to cast discredit upon human reason and upon philosophy than has any other cause. We shall meet with others, such as freedom *versus* determinism in conduct. Only by degrees has the human mind been able to achieve an adequate perspective and to pass beyond vicious and unreal problems. And yet all these problems were in a sense real. They represented difficulties. One extreme protested against another extreme.

The brute fact of the situation is this: Man arrived and crept around in this world for many thousands of years with no one to tell him about himself or about the world in which he found himself. Inevitably he began with myths and passed bit by bit to a well-constructed religious view of

[1] Lovejoy, *Essays in Metaphysics*, University of California Pub. No. 5, p. 197.

the world. His imagination was social and anthropomorphic. The gods did these things. The gods made the earth and created all creatures. The gods plan things and can be propitiated. It is with the *categories so established* that theology with all its refinements still works. Design and teleology are categories based on an extension of man's own agency to the world concentrated in a mystical and magical way in the thought of a god or gods. In this way was developed what I earlier called *the great hypothesis of religion.*

But the human reason in Greece began another type of interpretation of things and events. The form which we recognize as scientific reached its first clear expression in the work of Democritus. We may call it atomic mechanicalism. Undeniably, it is naturalistic in its intent and outlook. We need not examine it here because it has already been discussed.

This first form of atomic naturalism was challenged by Plato. His challenge was an event of tremendous historical importance for, right or wrong, it forced to the front another type of explanation, more akin to the religious view. Western thought has been divided between these two types. We shall try later to show that the perspective opened up by the idea of evolution offers a type of explanation which will do justice to what is valid in both of these positions.

Plato opposed to atomic naturalism a teleology based on his own spiritualistic metaphysics. For him, the world is controlled by ideas, or forms, of an eternal sort, assignable ultimately to God who is the seat of eternal truth, beauty and goodness. We must remember that, by ideas, Plato meant ideal forms which are dynamic realities quite independent of the human mind. These ideas operate upon the world after the manner of ends, values or final causes. This outlook was developed more concretely by Aristotle who peopled the world with active forms united with a passive matter. These forms exerted their influence, not as efficient causes in a

time process, but as ends. United with forms, the material world is swayed by its yearning after the perfection which forms hold before it. God, the Unmoved Mover, is the highest point and summit of this hierarchy of forms. Those who would realize the meaning of all this must think how love for a beloved person may control our actions. Ideals, or values, for Platonism are given a cosmological status.

During the Middle Ages, this Platonic-Aristotelian view held sway, and it was not until the rise of astronomy, mathematics and physics in the seventeenth century that the principle of efficient causality of a mechanical type again came to the front.

Nearly every one has heard of the position taken by La Place. He believed that a divine mathematician who knew the configuration of the bodies which constitute the physical universe and also knew their accelerations could predict all their future configurations. This ideal quite dazzled the scientific mind. Philosophers were puzzled, but escaped its import by dualism or by holding that the physical world is merely an appearance of something more ultimate. Let us be certain that we get the problem clearly before our minds. It was assumed that matter is inert, that we have to do only with accelerations among particles. Such a system is purely mathematical and permits prediction. *There is nowhere control, purpose or spontaneity.*

But organisms do exist. How could they have arisen? The traditional hypothesis was creation according to a design. And with such a background this hypothesis continued to seem the natural one. Mere chance, it was felt, could not account for these complicated structures and functional harmonies. Writers like Paley never tired of pointing out evidences of design. Unfortunately they forgot disharmonies or dysteleologies, as they are called; and they exaggerated the perfection of the human body. Nonetheless, they had their justification in the background of atomic mechanicalism.

If we ask ourselves very frankly what design can mean, we quickly see that it is a category taken over from human work. The inventor designs a machine; the artist designs a building. Here we have mind and body working together. Take the idea from such a setting and it becomes forced and unreal. Is God an artisan? In the eighteenth century, Hume pointed out the logical difficulties confronting the argument from design or external teleology. What do we know about such a designer? We can argue from a watch to a watchmaker because we have met watchmakers.

We saw how Darwin helped to break this deadlock by suggesting a natural process which might partly explain the rise of organisms. But, as we pointed out, he did not challenge the mechanistic outlook which dominated all lines of science. Is it surprising, then, that there has been dissatisfaction with Darwinism as too mechanistic? No experts would deny the value of his achievement nor belittle the stimulus which he gave to biological studies. He gave the death-blow to design in biology, and yet we are to-day convinced that the whole outlook of science needs reconstruction. It was to this problem that we devoted the first section of this chapter. We must deepen our thought of nature. We must get beyond the ancient contrast of mechanism and design. Nature is insurgent, creative, a domain of synthesis and origination.

The Need for New Categories.—Philosophy had not been sterile all these years, though science was too busy with its details to note what philosophy was thinking.

One of the striking attacks against traditional mechanism was led by Charles Peirce and continued by William James and James Ward. We may call this a shifting of interest from the mechanical schema to the *nature of the stuff of the world.* As Morris Cohen puts it, there was much 'mythology' in the tidy world of science "according to which all the atoms in the universe are to-day precisely in the same condition in which they were on the day of creation, a mythology which

is forced to regard all the empirical facts of spontaneity and novelty as illusory, or devoid of substantial truth.''[1] Experimental science has confirmed this attack. We have here a movement in the direction of what has been called by the French *scientific pluralism.* Let me quote a passage from a French philosopher expressive of this outlook: ''In all units, however small, of the physical universe, in all its aggregations, however vast, there is always heterogeneity, complexity; an intelligent and immortal being, possessing means of information endlessly perfectible, capable of progressing without obstacle towards the infinitely little and towards the infinitely great, would always find himself confronted with new differences, new multiplicities.'' [2]

The thesis of Peirce and Ward is that law springs from the spontaneity of matter. And this spontaneity of matter they call chance. Thus chance is more ultimate than law. Novelty is natural to the world, and law is the result of habit. Matter develops habits and tends to settle down into regular ways of acting. Spontaneity, or impulsiveness, comes first in order and gives way in a measure to routine.

What shall be our reaction to this very striking hypothesis which challenges the inertness of matter as conceived in traditional atomic mechanicalism? First, one of admiration, and then one of qualification. It is clear that we are searching for new categories. We feel that the action of things must be the expression of their nature and that we must not conceive of laws as external rulers. Very true; *laws are our formulations, and they are never exact and are largely statistical.* But do we need to assume anything more than genuine variety and self-expression on the part of the realities which make up the world? And it seems to me very likely that, the farther down we go into inorganic nature, the farther we are from psychological categories. I would suggest

[1] Morris Cohen, *Introduction* to his edition of Peirce's *Chance, Love and Logic,* p. XIII.

[2] J. Sageret, *Revue Philosophique* (1923), p. 222; quoted from Lovejoy.

that there are *degrees of freedom* in nature, and that the higher up we go in the scale of evolution the more freedom there is because the greater is the internal organization and plasticity of realities.

I would suggest, therefore, that regularity in nature is the expression of *absence of change*. Even human beings act again and again in the same way if they have not changed and the situation has remained the same. We should expect, then, that at certain levels of nature there is little alteration and hence great uniformity of behavior. Such changes as there are are secular and evolutionary. In short, I doubt whether chance is a good term for what is valuable in this protest against classic atomism. What is essential in the standpoint is a shift in emphasis from laws to the self-expression of the nature of things however far back we go. Laws are descriptions of the behavior of things, often descriptions of mass-behaviors. To postulate mind, habit and impulse at the inorganic level seems to me unjustified and to belittle the novelty which these thinkers wish to protect. I would suggest for chance and spontaneity a more neutral term like activity or functioning. Even behavior might be satisfactory.

One of the great difficulties confronting biology has been the achievement of satisfactory categories. There are those who wish to read into its data the categories of psychology; and there are those who will use none but the categories of physics. Now if the thesis of evolutionary naturalism is correct, each level in nature would have its own laws and categories. Organization is cumulative. We may put this metaphorically by saying that *time packs space*. At the level of biology, this cumulative organization is so internally significant that we have a system which is organic. Interdependence and cooperation are the characteristics of biological systems. Where there is interdependence and cooperation in a physical system we have always used the term organic, and it seems quite justifiable to employ the term *organicism*,

as advocated by G. H. Parker and by J. S. Haldane, or organismal as advocated by W. E. Ritter. The organic would be a level of organization.

The solution of the mind-body problem which we advanced enables us to affirm the actual reality of a high level of efficient causality in which internally developing systems control human behavior and, through it, bring about changes in the earth's surface. Agency in this sense there is; but it is localized agency just as for Einstein time is always local. Personality is a system founded on hereditary capacities and ripened by education and experience. If, as we have taught, psychology gives genuine knowledge about nature, it indicates in no uncertain manner the reality of creative synthesis, or cumulative growth, and the rise and functioning in nature of gradients, or levels, of efficient causality. The human mind surveys and correlates.

Push, Pull, or Internal Teleology?—We have our material in hand for re-stating one of the historical oppositions. It will be remembered that Plato challenged the adequacy of the mechanical type of explanation. One of the classical passages is from the *Phaedo*. The problem is the explanation of Socrates' conduct in staying in the prison when he might easily escape. "As I proceeded," said Socrates, "I found my philosopher altogether forsaking mind or any other *principle of order* but having recourse to air, and ether, and water, and other eccentricities; I might compare him to a person who began by maintaining generally that mind is the cause of the actions of Socrates, but who, when he endeavored to explain the causes of my several actions in detail, went on to show that I sit here because my body is made of bones and muscle. . . But to say that I do as I do because of them and that this is the way in which mind acts, and not from the choice of the best, is a very careless and idle mode of speaking." Here we have the historically significant contrast between mechanical, physical processes and human purpose in which valuations play their part. Has our investiga-

tion enabled us to mediate between these extremes and *naturalize purpose?*

The old perspective took the form of a sharp opposition between *push* and *pull.* Thus we may speak of the dead-level, mechanical view of tradition as stressing push. Every change is the resultant of many distinct pushes. An atomic system of this type is an aggregate. Pull, on the other hand, was the control exerted from outside by final causes or values or ideals. Pulling was often given a temporal interpretation. Thus it was supposed that the future, *that which is to be,* exerted this pull on the lagging and reluctant present.

In philosophy, we must always keep our categories in mind or else we get confused. It will be remembered that the distinctions between the past, the present and the future are distinctions before the human mind. The future means both that which is to come and that which we want to come about, and the future is thought of by means of a present idea in my mind. It is my plan for the future which is my present purpose. Pull must have a localized fulcrum. Clearly the great difficulty confronting all theories of pull or *finalism,* as it is sometimes called, is that it spatializes time and thinks of the future as somehow real now and operative upon the present. It makes the future co-existent with the present, which it cannot be.

The great systems of spiritualism have always tended to envisage the universe in terms of pull rather than in terms of push. They have given a cosmological significance to values and to ends. Usually this has been in a singularistic, or monistic, way. They have postulated a world-mind dominated by values, a normative sun which attracts and upholds what is ideal in our world. We have already noted that this is the assumption in Plato and Aristotle. Those who have read Dante will recall how completely his cosmology is dominated by the same thought.

But the physical realist is practically compelled by his logic to deepen and develop efficient causality and to reject

finalistic causality. Along what lines, then, can we advance to pass beyond the purely 'push' interpretation of causality? The crucial objection to it is that it assumes that all causal activity is merely an external shove. The imagery which dominates it is the imagery of baseball and billiards. One body hits another body. Now while we would not deny the existence of this sort of efficient causality, we must regard it a mistake to assert that it is the only type of event which occurs in nature. When bodies are highly organized they are capable of responses to stimuli, responses which are by no means adequately accounted for by the external stimulus or shove. The push becomes essentially an *occasion* which must unite with the capacities of the thing pushed in order to account for the resultant action. And, as we go up the scale of organization, the importance in causality of that which is pushed becomes ever greater. The living body adapts itself to the environment and even modifies the environment. Its response is differential. Take the level of mind. Attention is controlled by internal systems of interest and knowledge as much as it is by the intensity of the stimulus. If, then, we are to accept the push theory, we must disconnect it from mechanical atomism of the traditional sort and admit the significance of system and organization. We rightly feel that in most of our actions we are not pushed around from outside. There is *choice, adjustment, response* to these external demands upon us. It is because of this that relative autonomy is a feature of the world. Things are not passive and inert. Their nature and properties determine results as truly as the forces external to them which impinge upon them. Under the same conditions, one plant will die while another plant will flourish.

It is this growth of relative autonomy or self-rule which distinguishes the position which we have taken from the traditional contrast and by means of which we can escape from the old dilemma. It will mean that there are *degrees of freedom* in nature itself, degrees expressive of the prop-

erties of the things around us. A human being has a high degree of freedom because he has powers of interpretative adjustment to his environment. He is not a mere creature of circumstances but a person whose activity is determined by very highly developed powers.

Our suggestion amounts to this, that an organism is a thickened system with definite trends. Its organic structure points it towards the future. It has needs and ways of doing things. It has what might be called an *organic momentum* which uses and bends to itself those factors in the environment which are significant for it. Such a trait seems to me inseparable from an organic system. It is, for example, impossible to understand embryology apart from it. I doubt that it is possible to understand organic evolution without the concept of organic momentum. In our own conscious lives, the principle comes quickly to the front. Our present activities are conditioned by our past activities in the sense that our interests urge us on. Our goal is selected by our self, and this means that trends, tendencies and purposes grow up within us. Traditional finalism is just a misunderstanding of this immanent, or internally developed, teleology or directedness. Organization can never be passive or neutral; it must involve an urge or trends. The mistake which we must be on guard against is to reify these trends and make them external, attractive *ends* which exercise a spell over the organism. To do so would be merely to project a vicious analysis of human purpose into organic systems. It is this, we said, that traditional finalism did. If we speak of ends as governing organisms, as biologists constantly do, we must think of these ends as incarnated in the structure and internal relations of the organism. That which has a specified structure cannot be neutral; it must have a set, a characteristic way of functioning. In this sense, and in this sense only, ends are natural to the physical world; but they are local and intrinsic to particular thickened systems. With these qualifications in mind, we can speak of biology as need-

ing teleological categories. Organisms have designed themselves because design is natural to the physical world. But such design is a growth-design and not a planned design. It is only machines which are planned designs.

Does Internal Teleology in Nature Imply Mind?—We have argued that teleology is an expression of organization. It follows that it has *degrees,* and that we must not interpret the higher levels in the same way that we do the lower levels. Now many thinkers have suggested that we must hold Mind to be a universal driving force in nature and in all evolutionary change. A very able and well-informed English thinker who has done much work in genetic psychology, L. T. Hobhouse, asserts that he has been led to "raise the question whether mind (in the infinitely varied form of its activity, from the groping of unconscious effort to the full clearness of conscious purpose) may not be the essential driving force in all evolutionary change." And Lloyd Morgan, with whose standpoint we have expressed general agreement and sympathy, goes farther in a theistic direction and speaks of an Activity which is the *nisus* beneath the process of evolution. He even calls this Activity God and indicates his belief that it exerts a pull from above upon evolving nature, an essentially Aristotelian idea. To quote an important passage: "Within us, if anywhere, we must feel the urge, or however it be named, which shall afford the basis upon which acknowledgment of Activity is founded. What then does it feel like? Each must answer for himself, fully realizing that he may misinterpret the evidence. Without denying a felt push from the lower levels of one's being—a so-called driving force welling up from below—to me it feels like a drawing upwards through Activity existent at a higher level than that to which I have attained."[1] Analogous, at least, to these suggestions is the hypothesis of Bergson, who sees something of the nature of consciousness as the activity which creates, while matter is the slackening, or

[1] Lloyd Morgan, *Emergent Evolution,* p. 208.

decrease of tension, of this life-energy. What shall we say to these suggestions that mind is central in nature and in evolution?

In the case of Bergson we have a form of vitalism with a peculiar metaphysical background with which physical realism can have little in common. Have we any good empirical reason to regard matter as a deposit of life-energy? Frankly, I do not see that we have. Suppose we raise the very interesting problem: How far down in nature does mind extend? If we take mind as a term for a more or less sentient type of behavior, surely we have no good reason to extend it below organic life. It is very doubtful whether we should assign it to stationary things like plants. On the face of it, mind appears to be a novelty emerging with locomotion and the positive and negative responses which go with it. And yet we have here no absolute break with what goes before but rather a specialization in functioning, a new level which has its gradations, as animal psychology, and even human psychology, well shows.

The objections confronting the assumption of an Activity or a Guiding Principle or a Creative Will working in nature are the objections against vitalism and all other forms of dualism. *Such an assumption refuses to admit that a physical system contains its own trends.* It demands something immaterial to do the organizing and arranging. We can quite understand this demand as a counterpoise to the traditional mechanical view of nature; but has it a similar justification for the theory of originative evolution? Personally, I cannot convince myself that it does and that is why I call my own position evolutionary naturalism. Here the student has one of those basic decisions to make with respect to which he should be in no haste.

The objection to an Activity which pulls life upward seems to me very similar. Ultimately, I suppose, it rests upon the thesis that we know nothing of a discarnate mind. Where does this Activity reside? Is it outside space and time, that is,

outside the physical world? Since we know nothing empirically of a discarnate mind such an assignment would seem to be a form of words rather than a thought. That, at least, is my difficulty. And, again, it postulates a directing force which is external to the system directed. But we shall have more to say on this whole question in the third part of the book where we treat of values and a philosophy of life.

All such questions as these have their metaphysical bearings and implications. The perspective to which I incline is, as I have often indicated, pluralistic. The universe is a spatio-temporal complex containing immense, internal variety. Life and mind have their locus and their conditions. Both are natural to the universe, but are not natural to every part of the universe. Life and mind are the high levels of cumulative organization, levels which are attained seldom and in few places in the tremendous sea of suns and planets. Probably only single suns have planets, and that excludes many stellar systems as loci of life. And on the planets conditions must be favorable for life. It is very improbable, for instance, that life of any high animal type exists on any other planet of our solar system. As for the planets of other suns, what do we know? What shall we know? All this raises questions of significance. Clearly, it becomes harder to suppose that the stellar universe exhibits the marks of inventive design aiming at values similar to those we know. Otherwise, what a waste of material! Relinquish the hypothesis of design and creation, and our puzzles, at least, become fewer. We then simply seek to discover what kind of a world we are in. This much scientific cosmology seems to indicate to philosophy.

Purpose and the Efficacy of Consciousness.—We are now ready to attack the most delicate of the problems which confront cosmology, viz.,—the nature of the efficacy of consciousness. We postponed this problem from the chapter dealing with the relation between mind and body because the ground had not at that stage been sufficiently prepared. It is obvious,

for instance, that the rejection of mechanism as an adequate account of biological processes gives us new hope of naturalizing mental processes and localizing them in nature. If an organic system is thickened and has an internal teleology and trends, conscious processes begin immediately to seem more native and less alien to the inner adjustments of such a system. Recall the famous simile of Clifford to which the older view gave point. How could consciousness bind together molecules any more than the sentiments of amity between the stoker and the guard could link carriage and engine? Or, as James put it, "we can form no positive image of the *modus operandi* of a volition or other thought affecting the cerebral molecules." But we have seen good reason to believe that molecules form an integrated, organic system, historically developed and differentiated, which acts somewhat as a whole. The molecules are *already* bound together. The mind-brain is a moving complex of systems. The perspective has decidedly altered from the Huxley-Clifford days.

But there is the other important point. The older view was dualistic. It pictured the brain as a turmoil of atoms and then asked how another substance, called indiscriminately mind or consciousness, could act upon it from outside and yet not be quasi-physical. It is this sort of situation which James had in mind in the above quotation. But think for a moment how our epistemology and cosmology have altered the whole approach. Consciousness, we said, is an event in the qualitative dimension of a functioning mind-brain system; it is an event with which we are acquainted from the inside because it is what we as *conscious* creatures are. Here we have a monistic, instead of a dualistic, perspective. Consciousness is an event whose unity reflects the unity of the mind-brain as it functions. If it is efficacious, it is efficacious, not from the outside, but from the inside of the system. Have we not gained a great deal from this re-formulation of the problem? Consciousness need no longer be thought of as hammering upon the brain from outside in some mys-

terious fashion for which we have no positive image. I am quite aware that, until people live into the double-knowledge approach to the problem, they will continue to try to do just that sort of a thing and feel baffled. For them, consciousness will continue to be—as it is for George Santayana—a lyric cry in the midst of business, a belief in its efficacy "a superstition clung to by the unreconciled childishness of man." Clearly, the prime question is to know our terms. Conceive them falsely, and we beget an insoluble problem. It is precisely this that the human mind has in general done, and why it is so usual to turn away from the mind-body problem as an ultimate mystery.

There are two principles which seem to me relevant to the question of the efficacy of consciousness. And these principles are based upon the solution of the mind-body problem which I have called the "double-knowledge view." The first principle is this, *that the brain must not be thought of as a mechanical system but as a developed organization of tendencies,* a system which has the capacity to function in an intelligent manner and which modifies its functioning in a cumulative and interpretative way. In other words, the brain is a mind. The second principle is this, *that the efficacy of consciousness must correspond to its nature.* It was to this second principle that dualism could not be true in its theory of interaction. Because consciousness was assumed to be external to the brain, to be efficacious it must move it from outside, a causal operation which remained mysterious and magical just because consciousness was thought of as an external stuff. But let us, instead, think of a conscious process as a complex event in the brain-mind. What kind of event is it? An event at the moment the brain-mind is seeking to adjust itself, to solve a problem which involves analysis and synthesis and some sort of survey. Is it not this survey which consciousness gives to the brain-mind? We attend, relate, compare by means of these contents which are elements of consciousness. In short, the function of con-

sciousness would seem to be guidance. Introspection confirms this suggestion, though it cannot reveal to us the deeper play of the system of tendencies which constitute mind. We foresee the consequences of our possible actions, and we react as we respond to those envisaged possibilities. To me, only one who dogmatically limits his thought of cerebral action to the usual scientific schemata can deny the feasibility of this view of the efficacy of consciousness. It seems to me when I introspect that I can detect by data in my consciousness forces and tendencies which are pressing into action and of which these data are expressions. It is in this fashion that a vague impulse becomes a desire which knows its goal. In short, make consciousness intrinsic to the brain-event, and its efficacy cannot conflict with the facts of physiology and behaviorism.

The self is a very complex kind of reality. It is an organized system of habits, information, aims and sentiments. We must take a very realistic view of the self and not merely identify it with the pulse of consciousness which is its temporary illumination. And we must not think of consciousness as a stuff having a distinct existence; instead, to put it another way, it is a qualitative dimension of the operations which we as conscious beings are. What puzzles us is our tendency to think of the brain-mind in terms merely of our knowledge about it and forget that it has a *content* of its own which we cannot get at in that fashion. Our epistemology should make all this much clearer. The point is that the content of consciousness is a phase of the content of the brain-mind. Here, and here alone, are we on the inside of a highly developed part of reality. In planning and thinking we are ourselves seeking to make adjustments. And we realize that this sort of work cannot be done blindly. There must be discrimination.

Physiologist and behaviorist study the organism externally. They are, moreover, still dominated by dead-level mechanical ideas of physical action, and do not allow for pattern

and *levels of causality*. But even here there are many indications that a more flexible outlook is developing. The tendency to think of nature as a rigid machine with one or two degrees of freedom is passing. Instead, there is coming a recognition of the remarkable adaptive capacity of physical systems. Let this outlook be united with an adequate epistemology, and a clearer vision of the locus and nature of consciousness will arise.

Concluding Remarks.—This chapter has involved the study of some very basic categories. The questions we have studied are undeniably difficult, and it cannot be said that philosophy and science are as yet accomplishing much more than the getting of a more fruitful perspective than Cartesian dualism offered. The admission of integrative patterns in nature along with the recognition of evolutionary gradients lifts us above the sharp antitheses which so long controlled and frustrated thought. We see the futility and anthromomorphism of the choice between machine-like mechanism and design, and gain a more sympathetic insight into the movement of nature. At first, this movement is unconscious. We must then depend upon the descriptive knowledge we achieve by means of our intelligence looking into these systems through the key-hole of sense-data. We have scarcely an internal *analogon* on which to work. But gradually, as nature presses onward and upward, it attains a level which demands a tremendously complex and shifting adjustment. An organism is a physical system which maintains itself and even carries on a life of desire and craving. In this respect it has both relative autonomy and relative spontaneity. It is at this stage, apparently, that the pattern of life begins to glow and become conscious. And with man there arrives a social creature which by education and mutual stimulation becomes self-conscious. What a dramatic fact! It is man's drama, the drama of a creature which looks around upon the world at first with uninformed eyes and only slowly finds out about both himself and his world that we

shall now begin to study as objectively and sympathetically as possible.

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PART THREE

HUMAN LIFE AND VALUES

CHAPTER XXV

HUMAN LIVING AND ITS PROBLEMS

Human Living from the Inside.—In the first division of our work we examined the claim of human knowledge to reveal an external world. We there devoted ourselves to the history of philosophy, so far as it bore upon this problem, and to the controversy between idealism and realism. While trying to do justice to both sides of this persistent debate, we decided that, on the whole, the realistic position seemed best in accordance with the structure of experience and the claim of knowledge. In the second division, we explored the structure of the world at large in the light of modern science and came to the decision that the categories of space and time apply significantly to it. This decision led us to take naturalism seriously and to ask ourselves whether a frank pluralism of an evolutionary type did not better accord with our knowledge than a singularism of a spiritualistic flavor. Working along these lines, it appeared possible to regard human life as a level in nature made possible by environmental conditions and the very capacity of creative synthesis intrinsic to the world. We were aided, moreover, in our treatment of the age-old mind-body problem by the epistemology we had already worked out and by a subtler conception of consciousness as not a distinct substance so much as a stream of qualitative events in a highly integrated system. And now in this third and last division of our survey, we wish to look at actual human living from the inside, to see its specific problems and intrinsic categories. We now enter upon that division of philosophy, technically called axiology, which concerns itself with human valuations and demands.

We move inward upon human life itself. We are ready to leave this contemplative survey of being and to concentrate upon the characteristics of actual human living with its joys and sorrows, its failures and achievements, its purposes, efforts and valuations. Are not we human beings participants in the movement of reality, living agents located on the surface of this earth and leading dramatic lives of feeling, volition and thought?

Individuals are confronted by *situations*. For them, the world divides itself crosswise into self and others, man and nature. Thus the reader is a person with plans and confronted by problems. He must adjust himself to external physical and social conditions. And yet his hopes go beyond mere adjustment to achievement. He would be a lawyer or a doctor or a business-man or a teacher; he would have a mate and children; he would have avocations and hobbies; he would live, intensely enjoying the genuinely good things of life. In short, he would be an active, selective personality looking fearlessly out upon the world.

When we Americans wish to feel this sense of personality, of creative agency in the world, we may well go to Emerson. "I do not wish to expiate," he writes, "but to live. My life is not an apology, but a life. It is for itself and not a spectacle. I much prefer that it should be of a lower strain, so it be genuine and equal, than that it should be glittering and unsteady." Such statements as these carry us back into life. Duties, needs, desires, aims, dreams, these are the active stuff of human living.

It is the task of philosophy at this level to seek to understand the *texture* of human living. Here, again, we meet with an old field rich in human thought. For centuries, man has reflected upon his characteristic experiences. Thus we have the social and political sciences dealing with institutions and methods of a political and industrial kind. What is the nature of the state? What is the relation of the individual to it? What is wealth? What are the laws of its

distribution in the societies of to-day? Society is a very complex kind of thing having within it the momentum of human living and an historically evolved structure. And it is in it, even more than in inorganic nature, that the individual lives and moves and has his conscious being. Qualitatively it has tremendous significance and, of course, paramount value for individuals, for it is upon it that their interests and happiness depend. Let us think of the plastic arts, of literature, of industry, of politics, of religion, of friendship.

And, as I have already said, philosophy has not been remiss. Ethics, æsthetics, political philosophy, philosophy of religion, are all old subjects in which much good work has been done. And it is to these that we now turn. But here, again, an introduction does not permit of the detailed investigation which the subjects demand and lead on to. We must satisfy ourselves with a survey of the general nature of human living, hoping that the interest of the student will lead him on to take further work in these special subjects.

Has Human Life Intrinsic Value?—The category which the human sciences tend to bring to the front is that of value. We speak of moral values, æsthetic values, educational values, religious values. To understand what value is will be a large part of our present enterprise.

Man values as well as knows. In fact, he often knows because he values. He reacts to things, persons and situations in an emotional and volitional way, saying that they are good or bad, beautiful or ugly, evil or beneficent. This new kind of judgment which we did not examine in epistemology and cosmology will furnish us the clue with which to explore human life. Evidently, this characteristic element in human living raises questions of wide import which cannot be taken up in a satisfactory way by a narrow and specialized discipline. Just as the physical sciences do not investigate knowledge as such, so the social and human sciences do not seek to understand the precise nature of value and valuation. The

consequence is, that philosophy is obliged to analyze this new claim and activity and to bring it into harmony—if possible—with the results of epistemology and ontology. Are the values we give to things actually in them? Or are values meaningless apart from the constitution and purposes of human beings or beings like them? Is the world beautiful and good in itself? Or only in the eyes of conscious creatures who react within it emotionally because their weal and woe is bound up with objects and situations?

There are two questions in regard to values which are sometimes confused. The one concerns itself with the nature and kinds of human valuations and values and the other with the *fate of values in the cosmos.* We shall postpone the consideration of the second question to the last chapter in which we shall deal with first and last things, in other words, with the problems usually taken up in philosophy of religion. In the first chapters of this section, we shall devote ourselves chiefly to analytic questions concerning value and to an examination of moral and aesthetic values as particularly well-known and basic.

But in this introductory chapter it may be well to point out the crucial character of the problem of value. Why has it come to the front of recent years to such an unexampled degree so that it stands co-equal with epistemology and cosmology?

The truth of the matter seems to be that man is being called upon by his increase of knowledge about himself and the world to make a reflective readjustment in his perspective of an almost unparalleled sort. In the old days in spite of plagues and famine, the world was looked upon as a small, cosy and not unfriendly place. An excellent way to bring out the contrast between the older view and the modern is to compare Dante's cosmology with that of the astronomer of to-day.

"The scheme of the created Universe," writes Norton, "held by the Christians of the Middle Ages was compara-

tively simple, and so definite that Dante, in accepting it in its main features without modification, was provided with the limited stage requisite for his design . . . The Earth was supposed to be the centre of the Universe, and its northern hemisphere was the abode of man. At the middle point of the hemisphere stood Jerusalem, equidistant from the Pillars of Hercules on the West and the Ganges on the east. Within the body of this hemisphere was Hell, shaped as a vast, hollow cone, of which the apex was the centre of the globe; and here, according to Dante, was the seat of Lucifer . . . Immediately surrounding the atmosphere of the Earth was the sphere of elemental fire. Around this was the Heaven of the Moon, and encircling this, in succession, were the Heavens of Mercury, Venus, the Sun, Mars, Jove, Saturn, the Fixed Stars, and the Crystalline or First Moving Heavens."[1]

The subject of the Divine Comedy is—I use the words of Dante in a letter to Can Grande—"the state of the soul after death, simply considered. But, allegorically taken, its subject is man, according as by his good or ill deserts he renders himself liable to the reward or punishment of Justice." And Justice is something which governs the universe in a personal way.

Let us contrast with this conception a recent eloquent, though exaggerated, description of man's place in the world according to science:

"Man, so far as natural science by itself is able to teach us, is no longer the final cause of the universe, the Heaven-descended heir of all the ages. His very existence is an accident, his story a brief and transitory episode in the life of one of the meanest of the planets. Of the combination of causes which first converted a dead organic compound into the living progenitors of humanity, science, indeed, as yet knows nothing. It is enough that from such beginnings famine, disease, and mutual slaughter, fit nurses of the future lords of creation have gradually evolved, after infinite travail,

[1] Norton, *The Divine Comedy of Dante*, Introduction, p. 13.

a race with conscience enough to feel that it is vile, and intelligence enough to know that it is insignificant. We survey the past, and see that its history is of blood and tears, of helpless blundering, of wild revolt, of stupid acquiescence, of empty aspirations. We sound the future, and learn that after a period, long compared with the individual life, but short indeed compared with the divisions of time open to our investigation, the energies of our system will decay, the glory of the sun will be dimmed, and the earth, tideless and inert, will no longer tolerate the race which has for a moment disturbed its solitude. Man will go down to the pit, and all his thoughts will perish. The uneasy consciousness, which in this obscure corner has for a brief space broken the contented silence of the universe will be at rest. Matter will know itself no longer. 'Imperishable monuments' and 'immortal deeds,' death itself, and love stronger than death, will be as though they had never been. Nor will anything that *is* be better or be worse for all that the labour, genius, devotion, and suffering of man have striven through countless ages to effect.'' [1]

This passage—and there are many of like tenor to be found—presents us with a problem: the locus and nature of human value. Has human life value even though it does not last forever and even though it cannot control the structure and course of the sidereal universe? It is clear that it is the question of the *fate* of human values which occupies Mr. Balfour's attention but the prior question is that of the nature of values. Does nature actually assist in the rise of human values and does nature support them?

We must guard ourselves against the emotional effects of the pathetic fallacy. In what sense is this planet *mean?* This, itself, is a value term. While not very large, this planet is very favored as regards temperature and atmosphere. In the second place, famine, disease and mutual slaughter played

[1] Balfour, *Foundations of Belief*, pp. 29-31.

only a subordinate part in human evolution. It was endurance and ability which played the more positive rôle. And does man regard himself as vile? What would be the standard consideration of which would thus overwhelm man in his own sight? Where is the pure and sinless perfection before which man must cast himself down in self-disgust? Such phraseology reflects asceticism of a morbid kind. And in what sense is man insignificant? Is a creature that can create science and art insignificant before mere cosmic size? Surely, this is the old mistake of confusing the qualitative and the quantitative. And suppose that it is true that life will disappear in the far distant future from this planet, does this fact rob human living of its intrinsic values? Is cosmic permanence the sole criterion of worth? Is a picture any the less beautiful to those who enjoy it because it will not last forever? Is it not in creation even more than in possession that value consists? Time cannot wipe out the past, and love and joy and production *were* to the full even if they could not last.

I have made these several comments upon this rather typical passage because I do think that mere conservation as against actual living has been too much stressed. Is it not possible that value exists in the throb of intelligent emotion as human beings adjust themselves to their world and bring out its possibilities? Perhaps, nature is a cooperative condition of all the values we know rather than their enemy? Can health, love and beauty be separated from sky and air and landscape?

And, finally, it is the wiser part of philosophy, as of science, to recognize the kind of a world we live in and not to build up romantic expectations which will crumble around it. While illusion may have a justified place in life, it can surely not have a major place. Courage remains one of the chief virtues. So much for suggestions in regard to a problem we shall examine later, that of man's fate and the supposed dilemma between optimism and pessimism. In the

meantime, we shall proceed to consider the basic question of value in the world. Moral values will furnish a good introduction.

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CHAPTER XXVI

MORALITY AND ETHICAL THEORY

The Field of Ethics.—The philosophical science which studies human conduct and its standards is called Ethics. Ethics is a very old science and has had a varied and a distinctly controversial career very much as have epistemology and metaphysics. That should not be surprising because both man's view of himself and his view of the world have altered from age to age. Whence do moral standards come? What sanctions them? Are they fixed or changing? What kind of life should we seek to realize? Questions such as these arose as soon as moral reflection developed. Moral values are never indifferent to beliefs and to social conditions. Looked at in this way, it is not strange that man has only slowly gained insight into the nature of morality. We may say that moral theory has gained in adequacy with increased knowledge of human nature and with clearer realization of the whole process of human living.

In the present chapter we shall give some attention to the theories which have ruled ethical discussion in the past, but our main interest will be constructive and directed to the achievement of a definite view of the general nature and foundations of moral values. In other words, we shall attempt to show how morality functions in human life and how it expresses the values of both the individual and the group. Incidentally, this will necessitate distinguishing between intelligent and unintelligent morality. Such an approach is the more valuable in a survey like the present because one of the popular traditions is that morality does not have natural causes and sanctions but needs the support of supernatural

causes and authorities. For such a tradition, morality is considered adventitious to human life and pressed upon it from outside. From such a view, modern theory differs *in toto;* and we shall endeavor to show that goodness is the intelligent living of social creatures constructed as we are.

The field of ethics is, then, morality in the light of what we know about ourselves and the world. It is a patient examination of moral facts to discover their meaning and foundation.

Everyone knows in a general way what morality is. The term arouses in us thoughts of customs, rules, duties, ideals, virtues. We say to a person that this kind of action is the custom here, that truthfulness is a virtue, that the wise and patient care of children is a moral obligation, that ideals are projected improvements upon customary modes of life. In this connection, we employ such terms as right and wrong, good and bad, duty and conscience, responsibility and moral freedom, moral principles and methods. We may speak of such terms as the *moral categories* for they are fundamental concepts without which we cannot understand and interpret our human life.

We have given reason to believe that these moral categories are not universal in the same way that space, time and causality are. Rather are they intrinsic to, and characteristic of, a certain kind of living. Thus it is fairly obvious that such value terms as good and bad, right and wrong, are expressions of approval and disapproval on the part of conscious beings. When I say that this act is wrong, it is clear that I disapprove of it. And one can quickly realize that these predicates are correctly applied only to acts of a certain character by agents of a certain type. This means that moral categories have a limited area of application. They apply primarily to human beings since these, alone, seem capable of judging the value of their acts. Morality and personality go together.

There are many indications that man did not at first realize

this limitation of morality to himself. Even inanimate things which injured human beings were at first condemned as guilty of doing that which they should not have done. Undoubtedly, there was in this procedure a trace of that *animism* which was so definite a feature of man's early outlook upon the world before he had learned to recognize the difference between the animate and the inanimate, the conscious and the unconscious. Kinds of existences were not differentiated as yet but rather merged vaguely together. Probably it took even longer for man to realize how different he was from other animals. It is true that he got bravely over that and went to the other extreme, as the struggle over evolution shows. But it is not difficult to find early laws which involve the trial and punishment of animals which have killed or hurt human beings.

It is to-day frankly recognized that developed human beings endowed with certain psychological powers or abilities are alone fit subjects of moral judgment. And, of their actions, it is voluntary actions that are regarded as the suitable material for moral approval or disapproval. We do not judge children in quite the same way that we judge adults. Do we not feel that in voluntary action intelligent adults can foresee the consequences of their action and thus know pretty well what they are about? We hold them *responsible,* that is, answerable.

To determine just what we should mean by responsibility will be one of our tasks. It presupposes certain things which are not always understood. Why are not the insane held responsible? What they do is as injurious as what criminals of the supposedly responsible type do.

Ethics discovers that there are very many interesting questions which arise during an examination of its field, the voluntary actions of human beings. Thus many of our voluntary actions are generally regarded as morally indifferent. Shall I play golf this afternoon or go for a walk? Shall I read a new book on philosophy this evening, or shall I re-

read Butler's *The Way of All Flesh?* A voluntary action implies a certain measure of choice or selection between possible lines of action. Why are some choices regarded as morally unimportant and others morally important? This problem has led to the attempt to define what is meant by a *moral situation.* We can say in general that a moral situation is one in which the feeling of duty enters. But what is this feeling of duty and by what is it conditioned? May it be that important values or interests are felt to be at stake?

But we have said enough to indicate the specificity of the field of ethics. Human living is a specific kind of living which involves the valuation of actions as good or bad, right or wrong. Moral questions are recognized and standards set up and applied. All this is empirical matter which we all know about in a general way but do not usually understand to the full. Since the early days of Greek philosophy, reflection has been directed to these characteristics of human life, sometimes in an analytic way, sometimes in a directive way. The prime task of ethics is, however, to understand morality. If it can add positive suggestions as to lines of conduct, that will be so much to the good. But it must never neglect for this the work of analytic interpretation of moral conduct.

Methods of Study.—Morality is a wide field which can be approached in different ways and from different angles. Any one who wishes to go into the subject thoroughly should employ all relevant ways of approach. In this brief survey we cannot do more than indicate them.

The older tradition in ethics was analytic and speculative. It sought to determine the meaning of the essential terms and to set up a standard of the good, based upon a theory of man and the universe, which would give the proper sanctions to a reflective morality. *Ethics arose, in short, in an attempt to meet moral skepticism.* The breakdown of rigid, customary morality and the rise of individualism with its accompanying critical attitude led to what appeared to many to be moral

anarchy. There have been many such periods of conscious transition and questioning, and we are enough in one at present to appreciate their nature.

Moral skepticism led to what is called indifferently *ethical relativism* and *ethical subjectivism.* These terms are used to signify that *what seems right to the individual is right.* Accompanying this principle is, usually, the idea that what seems right to the individual is his personal advantage. Personal advantage is set over against custom and law in a rebellious sort of way. There is a refusal to admit that custom and law are right, and just, simply since they are custom and law. Something more basic is sought; and the idea naturally occurs that pleasure and personal success are being ignored too much for the sake of rather ignorant convention.

Out of this situation arose the ethical theories of Socrates, Plato, Aristotle, Epicurus and Zeno. These thinkers sought to define the good at which man should aim, tried to find a rational criterion for conduct. Their analytic reflections established the problems and the general direction of philosophical ethics. In a way, we are seeking to clarify the problems they discussed, in the light of our larger range of experience and fuller insight into human nature and its cosmic status. With these qualifications it would almost be true to say that we are revising Aristotle's ethics, a book which is an excellent point of departure for the student who wishes to look at conduct objectively and dispassionately.

A supplementary method of study of morality has bulked larger and larger of recent years. Sometimes it has been regarded by its champions as practically supplanting the older tradition. The keener thinkers have, of course, retained their perspective while pointing out the merits in this new method.

Ethics as an empirical science is for this new movement a careful study of human morality in an historical and sociological way. There are moral facts, and these can be gathered, related to the social conditions of their time, and

compared. We may call this the objective study of morality, using the term objective in much the sense employed by behaviorism in psychology. The morality of the various social groups existing now and in the past is scrupulously examined. Thus the various codes of conduct in regard to sex, property, children, war, personal relations are tabulated and correlated with stage of civilization, food-supply, religious views, institutions, etc.

There can be no doubt that this careful study of morality through the ages gives a broader outlook and indicates the presence of certain objective laws or correlations. It becomes clear that morality is not a merely haphazard affair, a matter of personal whim. The foundation of moral custom is the folk-ways, and this is a complex in which conditions, beliefs and accident have all played their part. Moreover, this historical and comparative study of morality tends to rid those who come in contact with it of provincialism and the belief that morality is something stationary and uniform. In this way, it is an antidote against intuitionalism, traditionalism and dogmatism in these matters. It gives, in short, a broad foundation in the subject-matter of ethics for reflection.

I do not think that it is too much to say that ethics is feeling the effect of the meeting of these two broad currents of study. The advance in philosophy and psychology—of which we should now be well aware—enables the present-day thinker to raise the analytic questions of the nature of moral judgment, duty, responsibility, the good, with deeper insight and within the larger setting which social history unfolds. The categories of ethics are distinguishable from the concrete content of morality and, at the same time, principles are suggested which may guide us in our experimentation with life.

Theories of Ethical Knowledge.—It should not surprise the student to find that ethical theory was affected by the theories of knowledge which arose during the seventeenth and eighteenth centuries and which we have already considered in connection with the controversy between idealism and real-

ism. Rationalism was easily led to maintain that ethical knowledge is an affair of the reason, while empiricism was equally convinced that it is an affair of experience. We shall suggest, of course, that we can no longer hold that any ideas are given by any fixed faculty, call it reason or sense, but that ideas are growths within experience resting upon all sorts of human activities and relations.

Ethics must free itself from mythology, much as physical science has had to do. Religious tradition has favored the notion that conscience is an innate faculty which is, as it were, a representative of deity. It is the voice of God speaking to the human soul and telling it what is right and what is wrong. This good genius may be hearkened to, and then all is well. But there is a tempter who whispers us to do other things contrary to conscience, and, if we listen to it and disobey our conscience, then we are doing evil.

This hypostatization of our moral feeling and judgment, this explanation of it in terms of a spirit or entity at work within us, still lingers among people who have not given the subject much thought. It will be our endeavor to show that moral feeling and judgment is explicable in terms of human nature in its social development. It is fundamentally a matter of comparative valuations characteristic of our human, selective living.

Since philosophy could not accept the crude, mythological interpretation of conscience, it is not surprising to find that, in the days in which theology still dominated thought on these matters, the mythical view of conscience was refined and translated in various ways into an innate faculty. We can even trace the transition from the cruder to the more critical view. Thus early Christian thought was influenced by both Greek rationalism and theological prepossessions. "How," asks Chrysostom, "did your lawgivers happen to give so many laws on murder, marriage, wills, etc? The later ones have perhaps been taught by their predecessors, but how did these learn of them? How else than through conscience, the law

which God originally implanted in human nature?" Medieval thinkers puzzled much over the difficulty that conscience seems to make mistakes and the suggestion was put forward that there are two faculties, one at a higher level than the other. My conscience deals with particular acts and may err in its pronouncements but there is another faculty, called the *synderesis* which tells me in general that evil must be avoided.

So long as reason was thought of as a faculty which has the power to produce valid ideas—a view which we saw Descartes entertained—it is not surprising that ethicists appealed to it. They reflected here the general tradition. Reason reveals moral truths as well as mathematical ones. This view is well exemplified by the English Platonist, Cudworth, and the American may well remember that Emerson's teachings are in line with this tradition.

The greatest ethical rationalist of modern times is undoubtedly Kant. In this field, also, he opposed extreme empiricism by an attempted blending of sense and reason, reason giving the form or law. Kant took his departure from the ethical category of duty. There is, he maintained, an imperative of a moral type within us which cannot be reduced to calculations of pleasure and pain. It is anti-sensuous and unconditional. He postulated, accordingly, a practical reason which gives moral laws much as the theoretical reason, it will be remembered, gives order in perception and thought. Unfortunately, this conception implied *formalism* of a rather empty sort. Kant believed that he could discover certain general precepts or laws of the practical reason which would furnish guidance in conduct. Thinkers are, however, very skeptical whether these laws are innate; rather do they seem to be the sort of ethical maxims which the Christian, rigoristic tradition would suggest. Take, for instance, this law which Kant asserts the categorical imperative enjoins: *"Act so that the maxim of thy will can always at the same time hold good as a principle of universal legislation."* It is clearly

formal, and it is really doubtful whether it does justice to the specificity of ethical situations. What is the right thing to do in one case may not be exactly the right thing to do in another case. And we must also note that this principle does not show us what the maxim of our will is as regards its concrete content. Would bandits be willing to let everyone steal? If so, they would be applying Kant's principle.

Ethical empiricism arose as a protest against ethical rationalism of the innatist type. It, also, had a varying career into which it would scarcely pay us to go at present. The movement which had the greatest influence, perhaps, was *hedonism.*

Hedonism arose in the classic world under the inspiration of Aristippus, the Cyrenaic, and Epicurus. In general, we may regard it as an attempt to explain morality in terms of pleasure and pain. The prime psychological fact for hedonism is that we seek pleasure and avoid pain. Pleasure is, therefore, a good, and pain is an evil. Because pleasures and pains are mixed and pain is sometimes a condition of a greater pleasure, many distinctions must be made. Nevertheless, this basic psychological situation must be the guide of ethics.

The thinker of to-day usually feels toward traditional hedonism much as he does toward traditional materialism. Both traditions have been technically inadequate while being nearer to the reality of things than supernaturalistic spiritualism or abstract, ethical rationalism. Hedonism has stood for experimentation in ethics and for the drift of concrete experience.

It is through the conflict between divergent traditions that progress is usually made in a field like philosophy. We must add that the growth of knowledge in regard to ourselves and the world has likewise greatly aided and has worked as a ferment in the above conflict. As a consequence hedonism has been greatly modified. We shall have more to say of the shortcomings of traditional hedonism and the direction which ethical thought is taking at present after we have examined the question of the good.

To summarize the conclusions which we have stressed in regard to theory of knowledge in the field of ethics: beginning with a rather mythological view of the source and nature of conscience, modern ethics passed to rationalism. Reason was supposed to be a faculty capable of producing sanctioned ideas of right and wrong. As for the criterion of these ideas, it was logical to appeal to clarity and self-evidence as rationalism did in science. But just as rationalism was challenged in theory of knowledge so it was condemned in ethics. Empiricism undertook to account for the origin and development of our ideas of right and wrong. It was quickly seen that feelings and emotions had much to do with moral approvals and disapprovals. The first stage of ethical empiricism is usually hedonism. It was so in the Ancient world, and it should not surprise us to find that Hobbes, Hume, Mill and Spencer—not to mention many others—were hedonists. Since their day, a better idea of the springs of conduct, the nature of standards, and the criteria ordinarily employed in ethical valuations has been slowly acquired.

Temperamental Attitudes in Morality.—Temperamental attitudes have had much to do with the actual content of morality and even with ethical theory. These attitudes are partly individual and partly a matter of social conditions. Thus we know that some individuals are more serious about life than others are, are more inclined to look forward and to plan for the future. These are admirable traits in themselves, but they are often accompanied by a certain rigidity and solemnness which leads these individuals to condemn relaxation and to misunderstand the value of play and art. Now the unfortunate part is that this temperament has been affected and misled by historical movements of tremendous power which, however valuable and—what shall I say?—justified as protests, were scarcely temperate and balanced. I refer, of course, to such movements as *asceticism* and *puritanism*. The consequence of this mingling of large social and religious movements with temperamental differences has been

the presence in society of opposed attitudes towards life. The puritan has the tradition of rather belittling, if not completely condemning, the play aspect and even the artistic element of life, while the cavalier, artistic, humanistic tradition regards the puritan outlook as narrow and unimaginative. In America, the conflict between these two moral perspectives is very marked. The literature on the subject is voluminous and is both instructive and amusing.

It is impossible to understand asceticism apart from a close study of such supplementary factors as (1) a dualistic, religious philosophy of life, (2) reactions against tendencies to sensualism, and (3) repressions in the personality of the individual. It is undeniable that historical Christianity contained from the first an ascetic strain which set flesh and spirit in a sort of metaphysical opposition to each other. Man was supposed to be of a dual nature. And then there was the dislike of the extremes of sensualism to which groups in the pagan world were prone. And, finally, the individual was often unable to work out a moral perspective for himself of a healthy and intelligent sort. The result was tensions and repressions and instability, a psychological situation inciting to refuge in some extreme like asceticism. And the unfortunate fact was that the better the instincts of the individual, the more apt he was to become an ascetic under these general circumstances.

It would take us too far to study the rise of puritanism and to point out its good and bad features. That there are both is undeniable. Something of the dualistic philosophy of asceticism was in it; something of a protest against mere pleasure-seeking; something of lack of culture and imagination in its more sectarian and philistine aspects.

When we remember how little man has known of himself and his place in the universe and how easy it was for all sorts of beliefs to flow into this vacuum, it should not surprise us that he has found it difficult to work out an intelligent mode of conduct expressive of his actual nature and situation.

We have the same chaotic state of affairs in morals that we have in his economic and his political life. Order of a well-grounded sort in all these fields will come only with time and better knowledge.

From the standpoint of ethical theory it is interesting to note that the ascetic, puritan, rigoristic tradition in morality has always opposed itself to hedonism. Such an opposition was so logical and inevitable that it needs scarcely more than mention. But the rigoristic tradition cannot be said to have had a clear theory to put in the place of hedonism. "To do right for right's sake" is admirable as an expression in condemnation of mere selfishness or looking for the main chance without regard to larger relations and consequences, but it does not tell us what the right is nor what our criteria should be. And religious puritanism has usually appealed to revelation or authority of some kind or has lapsed into supernaturalistic hedonism which gives up this world and its pleasures for bliss in the next.

The Nature and Conditions of Human Good.—We have said enough about ethics already to make the student realize that it is both an interesting and a complex subject. Many questions have arisen in it for discussion and possible solution. Thus the controversy as to the respective merits of altruism and enlightened self-regard has aroused much interest and has actually led to increased insight into morality. Again, there has been much examination of the idea of duty and of the meaning of right. But perhaps the drift of ethical opinion has been in the direction of determining what is the nature of human good and what are its chief conditions. In this respect we may be said to have returned to the Aristotelian tradition with, however, differences in our view of human nature and of the way in which the good is to be worked out. We are more experimental in these matters and allow for more variety in human nature.

What, then, is the Aristotelian tradition in ethics? It is a stress upon the attempt to discover what the nature of human

good is. Aristotle held that there is a supreme end for which everything else ought to be chosen. It is something desired for its own sake and not as a means. Thus we choose money chiefly as a means and it cannot be the supreme good. What, then, is it that would satisfy us and make us feel that we are achieving the natural goal of our activity? At this stage, Aristotle appeals in an inductive way to general opinion and is convinced that the term happiness or well-being (*eudaemonia*) expresses this highest good which gives meaning to life. But he recognized that while this term is satisfactory, people assign different contents to it. To some it means pleasure, to others fame, to others wealth, to still others power, and so on.

In an endeavor to determine with greater precision what constitutes happiness, Aristotle is led to investigate the nature of man, what it is he is best fitted to do. Man's good is the expression of the highest part of him, the reason. And we must distinguish between the impulsive part of our nature and the strictly rational part. The first can be brought more or less under the control of reason while the latter only needs instruction. Morality as ordinarily understood is an affair of controlled and guided desire. "The moral virtues come neither by nature nor against nature, but nature gives the capacity for acquiring them, and this is developed by training."[1]

Let us neglect those phases of Aristotle's teaching which reflect the Platonic view of the soul with its sharp division between reason and desire, and ask ourselves what the good which we tend to set before ourselves consists of.

Very briefly, we may say that the good is the mode of life and its achievements which brings with it a fair amount of active satisfaction. The basic fact to grasp is that we are persons of certain capacities, tendencies and temperament trained by the culture of an historically developed group and more or less adjusted to a particular social situation. In

[1] *Nicomachean Ethics*, bk. 2, sec. 1.

other words, we have habits, desires, needs and a situation to meet. These factors determine our valuations; and what we more or less systemically seek to do is to attain and maintain the kind of living which appeals to us most under the conditions which we must reckon with. In other words, we become a certain kind of self with the desires and valuations and opportunities of that kind of a self in its social medium. Our desires must be examined in the light of their consequences and their relations to one another. This will involve redirection and modification. And with wider experience new desires appear. The practical reason would seem to be the survey which guides these adjustments and interpretations intrinsic to human living. It is a valuational reason, that is, a reason which listens to and assists valuations.

Underlying the choices of the good are the characteristic instincts and tendencies of human nature as these have developed in the medium of social conditions and opportunities. There are controls and demands which the group always stresses, such as consideration of the common good and concern for what is generally regarded as admirable. But, when we come to describe the good we can never be formal. There is no one universal *summum bonum* or highest good. It is in biography and in the sympathetic delineations of human living by great literary artists that we obtain our best glimpses of the modes of life that in some measure satisfy.

How We Value in Affairs of Conduct.—Human living is a process conducted in a social or cultural medium and resting upon the expression of a self with its tendencies, beliefs, valuations and opportunities. And we must always remember that this self is neither fixed nor a flux. Our desires and interests change in some degree with conditions and experience. How, then, are moral decisions made?

Hedonism was one of the important, empirical theories of valuation. But it is generally admitted now that it was psychologically and logically inadequate. It oversimplified the moral situation and its methods and standards. I drew

the analogy between materialism and hedonism. Technically, both were almost completely inadequate because they did not analyze their terms.

We must distinguish, in the first place, between *psychological hedonism* and *ethical hedonism.* Though the distinction is not entirely clear-cut, it is a step in advance of mere vague hedonism.

Psychological hedonism is a theory of the motivation of conduct which affirms that we are always *aiming at pleasure,* that we have pleasure in mind as our constant goal and objective of action. Ethical hedonism is the theory that pleasure in the thought of an object is the only significant *criterion* of valuation in reflection about conduct and thus in the determination of what is desirable.

Closer observation has so qualified psychological hedonism that it is quite fair to say that it is now rejected as invalid for our more serious conduct. The springs of action rest in our personality and consist of tendencies, habits, desires and ideals. This dynamic foundation of our life finds expressions in concrete aims which the actual situations suggest and warrant. We are hungry and desire food. We are lonely and desire companionship. We are intellectually curious and desire books and stimulating conversation. We are patriotic, and desire that our country show intelligence in its policies, etc. It is not psychologically true that we are primarily aiming at an object called pleasure in these instances. Even in moments of leisure and relaxation we select activities which we recognize *as pleasant.* In moments of pleasure-seeking, we are aiming at a certain kind of experience not connected with serious aims.

In this criticism of psychological hedonism the philosopher and the psychologist are not at all biased by the tradition of rigorism or puritanism. Surely pleasure as an element of our experience is intrinsically a good thing. We must simply realize, however, that as agents adjusting ourselves to a social and physical environment and expressing our trained capa-

cities we do and must aim at specific objectives. The problem is, accordingly, how we evaluate these objectives which we desire and how we adjudge some of them not only desired but desirable.

The older phase of ethical hedonism may be called the hedonistic calculus. It supposed that the only logical and intelligent thing to do—if we were not to be mere creatures of custom and habit—was to estimate the pleasures and pains probably in store for us in case we did this or did that. Jeremy Bentham, one of the founders of modern hedonism, went into this calculus in detail.

Here, again, I would not go to the extreme to which some writers have gone and deny that we ever employ some approach to this method. We interrogate ourselves to see what appeals to us and we look abroad to examine consequences and effects and the way in which they would impinge upon us. Nevertheless, it seems truer to hold that our valuations are not so much in terms of imaginable pains and pleasures as in the realized appeal which objectives and events have for us. Values are growths reflective of ourselves and the whole social situation with which we identify ourselves. They embody expectations, opportunities, past satisfactions, social prestige. Thus they are expressions of the self with its habits, instincts, training, ambitions. We must not forget this realistic foundation in the process and conditions of living. Nevertheless, it is true that the appeal which a projected action has to our personality *reflects* itself in our feelings in contemplation of it. The feeling is a sign of the appeal. It can, therefore, be used as a criterion in reflection. We feel that we would get more satisfaction out of this line of conduct than out of that. As we often say, we may be foolish but that is the kind of a person we are.

The ethicist, in short, must arrive at a theory of how values are built up in the individual and in society at large. He must also examine our reflection when we are trying to compare valued objectives and make a choice. The basis is

clearly human personality in its social setting of suggestion and opportunity. Reason plays its part in bringing before our mind results, relations and opportunities. And we *find* that we respond to the objectives, thus envisaged in their objective setting, with degrees of satisfaction.

Once we have understood the conditions and nature of comparative valuation, we have done justice to all that ethical hedonism should rightly stand for. And the term hedonism has been so closely associated with psychological hedonism that it is doubtful whether it will not always be a misleading term. In this field, as in so many others, philosophy is gradually gaining perspective and rising above the harsh and imperfect oppositions of the past. What we should stress in the theory of ethics is *the process and criteria of comparative valuation.* Back of such intelligent valuation we must feel human nature, the world as it is and the urgency of living, itself, with its acceptances, its adjustments, and its more or less daring explorations.

It is unfortunate that we have no descriptive name for this outlook to which reflection is leading thought. To call it utilitarianism does not seem quite right, though it has the same empirical belief in concrete testing that utilitarianism had, for utility is too limited a term for the range of human interests, and the logic and psychology of valuation held by utilitarianism was too hedonistic. To speak of it as self-realization does not quite satisfy either, for there is no fixed self to realize. It is in the interplay of the self and the world that living consists. Why not call the position *ethical humanism* and recognize the part played by both reason and feeling?

Having achieved a standpoint in ethical theory, let us now apply it to the ethical categories and seek to answer those basic questions about the objective validity of morality which trouble those who have been accustomed to depend upon some supernatural sanction. How does morality justify itself before human reason and experience? What should we mean by duty and responsibility?

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CHAPTER XXVII

THE SANCTIONS AND CRITERIA OF MORALITY

What Is Conscience?—Because words are definite, it does not follow that what they indicate is also definite. Popular literature and speech have developed the notion that there is in us a power or faculty concerned with our actions and informing us what is right and what is wrong. We are encouraged to listen to conscience. It is declared to be a monitor or guide implanted in our bosoms for our moral guidance.

But either an objective study of moral conduct or an introspective examination of our own moral experiences quickly dispels these mythical notions. Conscientious people, that is, people who want to do the right thing, differ markedly in their estimation of conduct; and we do not even need to go from one civilization to another to discover this variability of the dictates of conscience. The conscience of some individuals rebels against what seem to others to be harmless amusements. And when we seek to discover what goes on in ourselves when conscience is troubling us we find feelings of anxiety and distrust, regret that we have done what we have, suggestions to the effect that we cannot harmonize what we have done with other modes of conduct, wonderment as to what other people may say. In short, we have within us a complex of ideas and feelings marked by a measure of fear and conflict.

Conscience would seem, then, to be a term marking feelings, attitudes and beliefs whose origin and basis it should not be difficult to explain. Thus we are aware that deeds which

tempt us often have undesirable consequences. If we give way to an impulse of the moment we may regret it. We soon build up inhibitions against hasty actions and develop an attitude of hesitation and resistance to suggestions. When we remember that man is a social animal trained in the group, it is not surprising that types of conduct awaken disapproval in him. The child, for instance, is taught to think of certain actions as those which he must not do. This meaning may have been caused by punishment or it may be due merely to what the parents or companions have said or the way they have acted. We are all sensitive to the views of others, especially when these views are accompanied by signs of deep feeling. This control of our own estimation of an action by the current attitudes of our fellows is so direct and important that many ethicists have spoken of conscience as the reflection of the tribal self. This means that we consciously and unconsciously pick up and adopt the standards and views of those around us. Again, we tend to apply to ourselves our own passionate approvals and condemnations of the conduct of others. We don't like injustice and therefore we do not want to be unjust. We admire generosity and kindness and, accordingly, we can't approve of ourselves when we are selfish or harsh.

The student of morality finds it, then, rather easy to explain the phenomena of conscience. The variation in the content of conscience from age to age and from nation to nation seems explicable only in a naturalistic, social way. The conditions under which these people have lived have been different; their moral leaders have had different ideas partly as a consequence of this; even accident has played its part in this evolution and alteration. So much for the variability in the concrete content of morality. But the emotional flavor of conscience is much the same for all people because it expresses a common psychological texture, the existence of conflict and inhibition, the sense of the opposition between a desire and conduct of a more accepted sort.

We have taken conscience in its primitive, vaguer and more emotional aspects. I do not think that many entirely escape from this phase, or background, of moral judgment. It colors our sense of duty and qualifies our interpretation of acts. It is something residual and seldom fully analyzed. For instance, we may convince ourselves that an unconventional act is quite harmless and very enjoyable and yet not escape a certain emotional tension of an unpleasant sort. This may vanish after a time, or what may remain may be only a *fear* of public disapproval, of those subtle punishments which the group knows so well how to inflict.

The more explicit and reflective level of moral judgment rests on this more emotional foundation. Just because of its explicitness and its critical character, it is usually given another name, such as judgment, realization of duty, moral insight. Let us recognize its continuity with "feeling-morality" and proceed to analyze it in the hope of better understanding the nature and significance of the moral categories.

Moral Judgment and the Nature of the Sense of Obligation.—We can distinguish three levels of conduct. First comes the broad foundation in those activities which concern existence, the getting of food and shelter, defense from enemies and the satisfaction of sexual and parental instincts. Habits and folkways arise and determine the texture of conduct at this level. As time passes, action becomes more intricate and explicit and even transforms itself into custom. At this level, morality consists almost entirely of conformity with the mode of life of the group. Customs are standards, that is, socially approved ways of action. Because life is not very complex as yet and because social agreement dominates conduct, we may speak of this level as customary morality. There is a strong sense of the right way and the wrong way. The individual does not seek to decide for himself what is correct form in action but scarcely with question proceeds to follow the appointed path. A third level of conduct appears when the individual becomes a centre of initiative and decision.

Bit by bit, flexibility and variability begin to manifest themselves. The individual is both less supervised and more developed in his capacities and range of activities. He is thrown back upon himself and must make choices. We may speak of this level as reflective morality.

We must never acquire the notion that morality developed as the affair of an isolated individual. The context of conduct is always social in the sense that it is action *into* a civilized group and must involve some measure of adjustment to it. All actions have consequences, and these consequences are as causally conditioned as any others. The needs of an individual are real and imply relations with other real people in a type of society which is as real and objective as a physical thing because it is an organization of human beings who are conscious and intelligent physical things. The medium of all moral conduct is social.

But we must be pluralists enough in these matters to realize that the texture of society changes from level to level. Authority and the cake of custom—to use Bagehot's phrase [1]—dominate at first. Solidarity is the need, and, since life is simple, definite rules can control the individuals. There is undoubtedly loss—initiative and invention are excluded for example—but the group holds together and maintains itself. Human nature being what it is and social conditions and exigencies as they have been, it is quite a defensible thesis that custom and authority had to rule at first. We moderns would not like it and would feel stifled by it but we can understand how natural it is. In fact, we are beginning to be acutely aware that democracy at times runs the danger of reversion to this method and the consequent social texture. At any rate, pressure against inherited custom—even revolt against it—always arose as life became more complex and as individuals had to take and did take more initiative. New problems and situations caused reflection and experimentation. Within the outlines of conventional morality arose

[1] Bagehot, *Physics and Politics, passim.*

both a new spirit and considerable leeway for individual decision. The consequence was that principles and methods had to take the place of what we may call moral red-tape. While played upon by all sorts of suggestions and while recognizing social facts, the individual had to think moral problems through for himself. Of course, the degree to which individuals do this varies tremendously.

It is with this level of human life at which the individual makes decisions on conduct of importance that we are concerned. What is the nature of moral judgment? And what is the character of the sense of duty or "ought" which is a usual accompaniment of it?

A moral situation, we have already suggested, is one in which matters of importance as regards ourselves and others are up for decision. There is always the question of how an act will affect myself and other people. We have desires and we ask, Are they desirable? Is there any good reason why we should inhibit them or modify them? As a rule, a moral question does not arise over mere technical questions of the best means, from the standpoint of intelligence and efficiency, to accomplish a desired end, but about the human effects and relations of those means and ends. What we desire is so far good; and that which is a necessary means is good in so far as we are willing to pay the price in effort. But we are aware of consequences to ourselves and others which we do not like and which we are aware that public opinion in general condemns. What are we then to do? Well; it is obvious that we have a reflective moral situation and must think the possible acts through and evaluate them. If we evaluate them in one way, we say that, on the whole, the desire is desirable and should pass into its corresponding conduct. If we evaluate them in another way, we say that the desire will lead to what is undesirable and should be controlled.

In a reflective moral situation, the individual does consciously and for himself what has already been done in some

measure by others and is, as it were, socially recognized. We know that certain acts are publicly labelled good or bad. These values have become attached to them as a result of various events. Perhaps leaders have so designated them, perhaps, they obviously conflicted with established needs and institutions. But there is this difference that, in reflective morality, the individual tries to think the act through and evaluate it himself. We do not assert that he does this thoroughly. That depends upon his knowledge and his ability to appreciate all the factors involved.

It would seem that a moral judgment is directly connected with choice and possible action. It is not like a purely intellectual judgment in this respect; but is more like an act of volition in which the self enters as an essential ingredient. Some very interesting psychological experiments have brought out this marked difference between a choice and an ordinary judgment. In ordinary judgment we are not emotionally aroused but are simply trying to get evidence for an interpretation of an object. In choice, on the other hand, what have been called "self-assertive" or "determining" tendencies are at work. And these tendencies are a part of the self which, however, is larger and more inclusive than they, taken separately. The self, in short, is a highly integrated complex of tendencies, knowledge, standards, and methods of evaluation and interpretation. Of course, it is not a fixed and unchanging complex but varies within limits. At certain times some tendencies are more powerful in us than at others. We may be ambitious at one time and inclined to leisure and pleasure at another, sensitive to the presence of people of the other sex or for a time distinctly ascetic. But, at any moment of choice, the self is a fairly dynamic and selective centre of being.

When we unite this analysis of the self in choice with what we have already discovered about the psychological nature of conscience we should not have much difficulty in realizing the precise character of the sense of duty or the "ought."

Let us remember that any desire is so far good taken in isolation and as merely expressing some phase of the self. The basis of duty is our dislike of certain desires because of our realization of their consequences and relations. Bit by bit we may have built up a dominant self which involves certain standards and relations to other people. Other persons expect certain things of us, and we expect similar things of ourselves. This organized, integrated, more or less socialized self—while always more or less fluid—has a momentum and implications which our intelligence shows us is opposed to desires which spring up now and then. The sense of "ought not" is the feeling which accompanies this conflict in which the organized self senses its incompatibility with a desire. It would seem, in fact, that this negative relation is the basic one, just as it is for conscience.

In very simple cases, rejection of a desire as undesirable is all there is. Our action is one of omission. But the situation is often more complicated and then we speak of our duty to do this and omit that. We compare two possible actions, it may be, and decide that the self demands our doing something to which we do not at the time have a strong inclination but to the not doing of which we have a still stronger dislike. It is not surprising that we compare lines of action in this way and speak of some acts as deeds which we should not do and others as deeds which we should do. Back of all this lies the kind of dynamic self I have tried to indicate with its accepted tendencies, admirations, implied relations and dislikes. To such a real self with choice and valuation intrinsic to its very nature, the moral categories are inevitable. There are incompatibilities of an empirical sort. We cannot admire bravery and cowardice at the same time; we cannot like justice and not dislike injustice. There are qualitative kinds of action and life which do not go together. And, in any one moral situation with its complexities, even deeds which are ordinarily harmless may need to be rejected as things we ought not to do. But in such

cases, we do not have so strong a sense of duty and may even be almost undecided.

Must Not vs. Ought Not.—We have sought to show that genuine morality is an affair of choices and that, in choice, the self is growing and determining its own growth in the situations to which it must adjust itself. Morality has, in short, to do with kinds of action and their foreseen consequences. These kinds of action are always connected with desires which may be of various degrees of strength. Our moral life consists, then, of choices which may be omissions, positive selections, novel solutions, and modifications. The basic point to get before us is that this kind of activity with its accompanying feelings is intrinsic to the kind of living human beings do. The lower animals do not possess moral categories just because they do not live at the level of action, sentiment and survey which is characteristic of human life.

To make this interpretation entirely clear, we must distinguish between "must not" and "ought not." While these two feelings are often intermingled at any one time, they are qualitatively distinguishable. I may feel that I ought not to do a certain act and be quite aware that I must do it unless I am willing to suffer certain punishments. And it may happen that I feel no sense of wrongness about an act and yet know that I must not do it since it is not worth the price I would have to pay, society being as it is.

Kant took his point of departure for ethical analysis from the fact of duty. He spoke of this as the *categorical imperative* and contrasted it with the *hypothetical imperative* in which the question is merely one of means and ends. Thus in the one case you feel that one line of action is morally wrong and that you ought to do the other. In the other case, your outlook is one merely of expediency; you have chosen your end—perhaps financial success—and you cast about for the proper means and methods. Hedonism, Kant supposed, set up the maximum of pleasure as the end and

therefore degenerated into a calculus of expedient means. In opposition, he stressed duty as other than pleasures.

In the preceding chapter we have argued that Kant's formal rationalism gave no adequate foundation for the determination of the good. The good seemed to us to be a mode of life with its satisfactions which man works out critically and experimentally and more or less adequately. And in this chapter we have tried to show that evaluative choice is intrinsic to the self as a centre of action. This means that duty is relative to our idea of the good and that no hypothetical, formal, practical reason can be regarded as its inspiration and source.

We must acknowledge that Kant had genuine moral insight. He sensed the significance of the "ought" for an understanding of morality and was assured that moral decision was other than a calculation of selfish and superficial expediency as to means. He knew that it concerned the mode of life and the kind of person one admired and wanted to be. But his insight was led astray by his rationalism, his rigorism, and his interpretation of ethics in terms of *moral laws* analogous to laws of nature. His position was of tremendous hortatory value, much as Carlyle's was later, but he had not solved the problem. That will come, I believe, only with a naturalism which has a place for humanism and which understands and appreciates human personality and its situation.

There was a tendency on the part of empiricism, a tendency reenforced by the historical study of morality, to explain the "ought" purely in terms of the "must," that is, in terms of the infiltration of the effects of punishment. The child is punished for certain things, and this punishment begets fear and dislike and anxiety. All through life there are *punitive sanctions* of this sort at work. Law and the police, public disapproval as expressed in whispers and coldness and ostracism, the hurt faces of friends, all these are punitive sanctions which guide the individual. And as if this were

not enough in the way of punitive guidance, religion has linked itself with moral pressure and painted the rewards and punishments of another world. The texture of morality varies with the dominant sanctions.

These approvals, disapprovals, and sanctions condition the outlook of the individual in two ways. He realizes what he will be punished for doing, and he assimilates and accepts the valuations and beliefs which are expressed in these social attitudes and actions. The conventional individual, that is, the one who accepts and adopts the *mores* of his group, develops a conscience, or sense of duty, quite in harmony with the current standards. He does not live a conventionally moral life because he is afraid but because he is that kind of a self. Perhaps we should not put it as strongly as this. Very few there are who never rebel against convention at some time or in some degree. At such times, the must and the ought tend to separate. To be more accurate, in really conventional people, that is, people who have not thought through questions for themselves, desire fights against a mixture of fear and conscience. Often this leads to reflection on moral matters.

We can conclude that "ought" is not the same as "must." A genuinely moral decision expresses the personality of the moral agent, his sense of values. It is undeniable, however, that pressures and sanctions must be reckoned with in any decision.

The Weakness of Convention and the Dangers of Novelty. It should not surprise us to find that reflection has always found fault with convention. In truth, it was the breakdown of hoary custom that led to the rise of ethics among the Greeks. Acquaintance with the lives of other people and a shifting of institutional arrangements led the more daring to challenge what the fathers believed in regard to both conduct and cosmology. As solidarity based on the old ties and attitudes weakened, self-assertion came to the front. Individuals wanted to live out their own lives as they saw fit;

and often ruthless selfishness came to the front. Theory sought to find a new foundation for conduct .

Let us see why conventional morality is weak. It is the resultant of many factors, some of which are valid moral foundations and some of which are not. Customary morality expresses a certain stage of culture with its beliefs and institutions. It is a sort of working adjustment in human relations. But any past stage of culture is inevitably imperfect because it is the expression of accident, ignorance, imperfect institutions and faulty beliefs as well as of experience, human adjustments, and ingenious adaptations. In short, a culture and its morality are growths which, at one and the same time, are praiseworthy and objects of criticism. The good is the enemy of the better. Moral progress means that something finer, more intelligent, better founded in human nature and the reality of things can be developed. The weakness of customary morality is its conservatism, its willingness to rest in the culture and sentiments of the past, its desire to make all individuals conform to the same mould and outlook.

The clash between customary morality and critical, reflective morality may focus on an individual or upon a class of individuals who exert pressure upon the more slowly moving members of society. When change and the belief in progress are in the air, these clashes are less violent and toleration of differences in conduct appears. There are all degrees of this situation.

We have tried to point out both the weakness and strength of customary morality. It is a cultural adjustment, but that culture may be capable of improvement. Let us now glance at the strength and weakness of the novel in morality.

The strength of the novel is that it may express new knowledge and a higher level of personality. A good illustration of this is the growth of feminism. The weakness of the novel is that it may express merely whim and selfishness and lack of awareness of the wider reverberations and consequences of conduct. How then is the decision to be made? It is ulti-

mately made by the social group as a result of evaluations in terms of knowledge and basic satisfactions. In other words, new cultural adjustments are achieved, supposedly expressing less accident, less superstition, and more knowledge and range of feeling. It seems to me that we can rightly think of human culture as a growth in which human nature expresses its possibilities in the kind of a world we are in. These are the two great axes of the curve of culture, but the particular curves are functions of innumerable ways in which human nature and the world have impinged upon one another.

Supernaturalism vs. Naturalism in Ethics.—It has taken human thought a very long time to get a proper perspective in these matters. Why this has been it should not take us long to see.

Religion, which is in its essentials the belief in usually invisible and yet very powerful beings who are interested in the group and cooperate with it, in various ways, became very early a part of the life of the group. Immemorial custom was held to be sanctioned by these superhuman authorities as well as by the group itself. The gods and humans formed one polity as it were. Any violation of sacred things or sacred customs would be punished by these divine beings, and it was probable that they would visit their wrath upon the whole group and not merely upon the individual. We need not go into detail in regard to the character of primitive religion. The Hebrew religion, one of the great ethnic religions, will illustrate the close connection between morality and religious beliefs. The Mosaic code, which includes the "ten commandments," was believed to be at once a command and a revelation.

This interpretation of morality as a command by authorities was a natural occurrence but, nevertheless, an unfortunate one. It is at the foundation of the belief that morality is something imposed upon people from outside and not something expressing their own life intelligently. Even the

phrase, moral law, was not a good one in pre-democratic days since so many laws were oppressive and connected with privileges possessed by favored groups. The mass of the people have not been enthusiastic about laws.

The sanctions of fear and punishment have likewise played a great part in the history of morality. Duty has been thought of as something which you had to do if you did not want to be out of favor with human and divine powers. Moral codes and legal codes were closely associated.

This external interpretation of morality as something imposed on people from outside in an authoritative way, something which they would not do if they were not frightened into doing it, has tinged the common conception of morality. The 'ought' has been largely a 'must.' In short, people have not thought of morality as an intelligent way of living but as a series of commands. Hence the genuine functions and justification of morality have been misunderstood. Perhaps the fear of hell and the hope of heaven still keeps some impulsive and unsocialized individuals within conventional morality, but ethics cannot sanction such a method as ideal. And one unfortunate feature of it is that it continues this total misunderstanding of the nature and justification of morality. The 'good life' is not a negative life in which people give up the world but one in which they master the world and wring from it a full life. Probably ascetic traditions have combined with the theological theory of morality to mislead and confuse people.

Since the whole drift of modern science and philosophy is toward a humanistic naturalism, this criticism of an external, supernaturalistic conception of morality is very essential. The student who has not been taught otherwise is convinced that morality is bound up with certain very tenuous theological dogmas and that, if these are given up, he is quite justified in acting like a brute or a fool. Of course, all this is the height of nonsense. Morality of a rational sort is, as I have said so frequently, just intelligent living, the living

which will give the kind of self you are the most lasting satisfaction in the kind of society you are in. Because of its own bias, the church has been guilty of believing, and encouraging others to believe, this imposition conception of morality. I don't want to be hard on poor, valiant, old Luther because practically every one in his day had the same supernaturalistic view of the sanction of morality, but, I cannot forbear quoting him. He said:

"If you believe in no future life, I would not give a mushroom for your God. Do then as you like. For, if no God, then no devil, no hell. As a fallen tree, all is over when you die. Then plunge in lechery, rascality, robbery, and murder." And Massilon, a French priest, wrote as follows:

"If we wholly perish with the body, the maxims of charity, patience and justice, honor, gratitude, and friendship are but empty words. Our passions shall decide our duty. If retribution terminate with the grave, morality is a mere chimera, a bugbear of human invention."

We understand morality better in these days. Morality is a growth within human culture, itself expressive of human nature and the relations of human beings to each other. It is not perfect and may be improved, but it is always a vast improvement upon mere impulse and inexperienced action.

The gist, of our conclusion, then, is that morality and its categories are intrinsic to that level of nature which we call human living. The area of human living is small in the ocean of existence but that fact is quite irrelevant to the validity of its categories in their field. Nothing can rob us of the fact that we are men and women or make it seem rational to us to act like unthinking brutes even were we able so to act.

The Final Sanction of Morality.—Each particular code of morality must be examined and must stand or fall on its own merits. Just because ignorance of conditions and historical accident have been at work in every such code, there are always features to be amended. Moral progress in the large means advance in knowledge of social conditions and

methods and something of the nature of development in the range and delicacy of human living. When we once grasp this cultural view of morality, we realize that it is an intrinsic part of man's adjustment to his world and of his exploration of the possibilities contained in life. It is this relationship of morality that gives it its final sanction to intelligent enquiry. Any code of morality is sanctioned so far as it is the expression of human nature and social conditions and embodies genuine wisdom. And in its degree this is true of all codes. They are never purely arbitrary and irrational. On the other hand, critical thought can never sanction them in any dogmatic and finalistic way. To improve them must always remain an ideal. We must think of them as experiments rather than as revelations.

When we look at the matter historically, we soon discern that moral skepticism arose inevitably as a revolt against tradition as such, which had no rational explanation of its content and its value. Why should we do things just because our fathers did? was the natural question which arose to the lips of a generation which was trying—however vaguely and crudely—to rationalize its life. The sanction of mere authority or of mere habit can never ultimately satisfy. The awakened human mind wants a deeper and more intrinsic sanction. And back of this revolt against mere authority was the feeling that many elements in the accepted codes were wasteful of life and based upon views which could no longer be held.

Ethical subjectivism, or skepticism, is, then, the manifestation of an early stage of reflection in morality. It indicates the passage from the unconscious, from that which has grown in a secular fashion by slow accumulation and modification, to the self-conscious. Is it surprising that reflection should not, at first, realize the function of morality and think of it as something pressed upon man from outside, something which has only force and superstition for its backing? The common appeal to supernatural sanctions encourages this

first, superficial interpretation; and the presence of injustice and unreason in actual codes suggests to many that those in power have too much to do with the molding of morality.

The only way of escape from moral skepticism is to press onward. There is no possibility of return to mere unthinking acceptance, to feelings of mystical sacredness. In brief, morality must justify itself before the bar of human reason and experience. And we have argued that morality as such has no difficulty in doing so, even though particular conventions and beliefs cannot. The ultimate, rational sanction of morality is the fact that it is grounded in the nature of man. He who is social and selective in his valuations is by that very fact a moral agent. It springs out of, and cannot be removed from, intelligent living. Our conclusion is that moral skepticism as a theory represents an attack upon an interpretation of morality which makes it rest upon mystical or merely authoritative sanctions and is to that extent justified. It can be overcome only by deeper reflection which gains insight into the actual function of morality in living as a control and intelligent directing of desire. Skepticism of particular codes is different from general moral skepticism and is often justified. One of the tasks of ethics is to discover criteria for customs analogous to the criteria used by science in its testing of beliefs. So far as one does this in his own life he replaces convention by *moral insight*. But this is not an easy thing to do, and there is danger of too great haste and self-confidence. He must be very sure of himself who departs very far from the prevailing code; and he must remember that society punishes its rebels so far as it is able.

What Should We Mean by Moral Responsibility?—In early days, practically every one was held responsible for his actions. Not only so, but the group to which the individual belonged was assigned a joint responsibility. An action was a fact to which the group and other groups responded in a self-protective way. In these days of individualism and

recognition of *intention* as morally basic, it is often a little difficult for us to appreciate this more primitive outlook. An example may assist.

Those who are familiar with the Old Testament may remember the case of Achan. It seems that Achan had wrongfully taken possession of certain articles from the spoil of Jericho which had been devoted to Yahweh. Afterwards Israel suffered defeat and this sacrilegious theft was discovered. It is written that "Joshua and all Israel with him took Ashan, the son of Zerah, and the mantle, and the wedge of gold, and his sons and his daughters, and his oxen, and his asses, and his sheep, and his tent, and all that he had. And all Israel stoned him with stones; and they burned them with fire and stoned them with stones."[1] This action was self-protective and reflected the fears and resentments felt by the group.

What, then, did responsibility mean at first? It meant that an individual or a group was the agent from which a deed of a harmful sort went forth. He, or it, was, therefore, answerable for it, could be called to account. Clearly, there is nothing puzzling about this meaning or about the situation in which it holds. The social balance which has been challenged and disturbed must be restored; social danger must be met and removed by action. Somehow the deed must be expiated and purification achieved.

At this stage, intention is little regarded. It is what is done that counts. The pressing need is to restore the proper relations and workings of visible and invisible agencies.

With the advance of culture and the increase of reflection, responsibility is focused increasingly upon the individual. Especially is this the case within the group. And intention counts for more, while due allowance is made for accident and the unforeseen. The individual is now held to be responsible for what he did intentionally. This policy expresses the necessary demand that society give the individual a cer-

[1] *Joshua*, VII: 24, 25.

tain initiative but judge his action so far as it affects the rights of others.

But it is gradually realized that not all individuals can be treated in the same way. The freedom given to some cannot be given to others. The child must be supervised and educated until he reaches a certain level of personality. He is then given the mode of life of the adult and told that he will now be held responsible for violations of the legal and moral codes. The assumption is that he now knows what he is doing and, in general, will fit in. An insane person is not given this status because it is believed that the ordinary motives and controls do not apply to him. He must be supervised, and it is society's mistake if he was not supervised and so committed a crime. A person is held to be responsible if he has the capacities and is controlled by the motives which are characteristic of society. *It means that he is a certain kind of person, one fit to be a member of society, one who appreciates human relations.*

It is obvious that all this is rough-and-ready, a sort of pragmatic distinction. Individuals differ in their capacities. There are border-line cases. To-day society is becoming quite aware of this fact and is making efforts to meet it by psychiatric clinics and special courts. Is an individual able to size up a social situation, to foresee consequences and put a normal value upon them, to control and integrate his impulses and desires? If he can do all this, he can be left to himself with the expectation that all will be well. If he cannot, he must be supervised so far as this is practical. Obviously, there are all degrees of personal and social capacity.

The kind of an individual who is held responsible to-day is one who is regarded as (1) controlled by social sanctions such as public opinion and fear of punishment and (2) has moral insight and makes personal choices in accordance with the welfare of himself and others. He, alone, is a genuine member of society. If his actions *conflict* with the judgment of society he will be punished. The assumption is made that in

this conflict society is right and that the individual has dropped below the rational demands of society. Usually such is the case, but not always. Sometimes the individual acts at a higher level than society in the main can understand and will accept. It is scarcely deniable that some pacifists have been in this position. Did not the rulers blunder in a criminal fashion in the decades before the Great War? But critics of the government in war-time must know what they are up against. It is for them a moral choice which they must make with their eyes open. But those who punish them have also made a moral choice which expresses their personality. As we look back at it all, whom do we admire? It is through conflict and challenge that moral advance comes.

It would seem necessary to say a word about punishment in connection with the idea of responsibility. We have already noticed how intimately the two are associated.

Punishment was at first the almost automatic expression of the fears and resentments of the tribe toward the individual, or group, responsible for a deed outraging custom. It was a movement aimed at the protection and defense of institutions and standards. The guilt had to be expiated. This origin and atmosphere still lingers around the notion of punishment. Many writers speak of punishment as an expiation of the affront done to the majesty of the law. There is a feeling of social resentment which demands expression. The criminal becomes an alien or enemy. Human instincts are at the foundation of this attitude and procedure.

But reason suggests other motives and purposes. The individual can no longer be given the same freedom; confidence is lessened. He may hurt still others or again challenge the social fabric. The best thing to do is to imprison him if death is too severe a sentence. This action will at once keep him out of mischief for a time and intimidate others who might otherwise drift into the same anti-social conduct.

Finally, there is the more constructive idea of re-education or reformation. Cannot the individual be redeemed and again

become a free member of society after the challenge to the social order has been reproved? It is this last idea which has gradually led to a closer study of the causes and conditions of crime and to an appreciation of the possibility of a better control of this phase of social life. Are there criminal types? Are some individuals unable to adjust themselves to our complex society? Have some individuals not had a fair chance? Does punishment in prisons answer the more constructive need now that we know that the social will to law and order is in no danger of overthrow? There are many searching questions which ethicists, sociologists and criminologists are at present investigating.

Free-Will and Responsibility.—Philosophy has inherited another problem—which, we shall seek to show, is largely a pseudo-problem—which puzzles people. Since ethics had in large measure a theological setting and supernatural sanctions, the question inevitably arose whether the individual, who had not made himself, could be held responsible by his creator and justly punished in another world. What is the source of human action? Is the individual "free" or "determined" in his conduct? If he is determined, then what he does is a foregone conclusion for which the initiator of all things is alone responsible. How, then, can this initiator have the impertinence to punish? If his action is not determined completely in this fashion, then he may be in part an originator and can be properly punished.

It is obvious, of course, that the primitive theory of punishment dominated theology. Punishment was an expiation of a challenge to God's laws and majesty. Such a great guilt deserved and demanded punishments that would make one shudder to think of. What should be done to one who affronted the King of the Universe? The setting of this outlook is evidently monarchical. It seems inevitable that the newer theories of punishment will undermine this whole theological approach. Shall man be ethically superior to God? And we must remember that in the old days men were fright

fully cruel to each other, quite capable of boiling thieves in oil or sawing them asunder. In our more humane days we will think of a god as humane. It was the old brutal atmosphere which made it possible for the religion of Jesus to co-exist with the belief in a literal hell. But our traditional religions contained many things more or less jumbled together.

In this brief section I have tried to indicate the setting which made the question of free-will so poignant. In the concluding chapter I shall examine the cosmological implications of moral choice and see whether it is possible to gain a rational and satisfactory view of human life which neither blinks its tragic aspects nor denies the joy and adventure which it contains.

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CHAPTER XXVIII

THE NATURE AND LOCUS OF VALUE

Why Questions of Value Are Basic for Human Life.—The critical consideration of the nature and locus of values has come to the front to an astonishing degree during the last few decades. Ethics has become the study of moral values; æsthetics, the study of æsthetic values; philosophy of religion, the consideration of religious values; and sociology is moving in the direction of the study of social, or group, values. It would seem that, in this term, we have one of those unifying concepts for which philosophy has always been on the lookout. Those who reflect on human life will not be surprised at this fact. Is not behavior at this level dominated by kinds of value, by comparative ratings, by preferences?

Philosophy was never unaware of this strategic significance of what is considered desirable. From the days of the Greek thinkers, we find references to the true, the good, and the beautiful. These, in truth, constituted the Platonic trinity. Nevertheless, there is a difference in the thought of to-day. In place of this abstract trinity we have a democratic variety of values, all jostling each other for recognition. And we see every historical culture as dominated by its own scale and complex of values.

That value is central to human living we soon realize when we grasp the fact that values are objects valued. Anything which we desire, need, want, enjoy either for its own sake or as a means is a value. Whatever attracts the individual or the group so that it is selected and plays a part in life is a value. And this would seem to mean that valuation expresses our linkage with things, our attitude toward them, our use of them, our living employment of them. In this

sense, food is a value; and so are health, play, scientific methods, political institutions, education, pictures. In short, whatever functions in human life is *ipso facto* a value.

In the two preceding chapters we examined typical questions of morality both for their own sake and because they would furnish an excellent introduction to the more general study of the nature and locus of value. Thus the *highest good* of ethical systems has always represented the idea of a system of values including criteria for selection and rejection. In like manner, historical epochs have always had their scales of values with some group of activities at the top. In a religious age salvation was the dominant desire, while, in a secular and commercial age, wealth and economic enterprise may be near the top in the estimation of men. One of the curious features of a period may be its uncertainty as to its scale of values. There may be drift, accommodation, experiment, differences of opinion. Perhaps, that is our situation to-day.

A very interesting contrast stands out in the domain of values. It may be indicated in the following fashion: in periods of authority, there are standard values which are accepted by nearly all and which are supposed to be absolute, fixed and accredited; while, in a revolutionary, quickly-changing era, nothing seems absolute and fixed. Now, for better or for worse, we are living in a period of the second type. Authority is limited and must justify itself. We are sophisticated and have a keen sense of the relativity and interconnection of values. And yet we are convinced that values are not purely arbitrary but express human nature and cultural conditions. It is suggested to us that values are at once objective and relative, that is, that they are grounded in life as an historical development and are part of a complex. How, then, can we evaluate? What shall our tests be? And, hovering before our minds, is the inevitable query, What is the relation of human values to the universe? Philosophy cannot avoid this final problem.

It is not difficult to realize that, in this new field, a controversy quite analogous to that between spiritualism and naturalism in cosmology is certain to appear. Recent writers have recognized this fact and speak of idealism in regard to the locus and nature of values and naturalism in regard to the same. A quotation from Professor N. K. Smith may make this contrast clearer: "The meanings attached to the term 'idealism' are so numerous and so conflicting that I have found it convenient to use it in a very wide sense, as covering all those philosophies which agree in maintaining that spiritual values have a determining voice in the ordering of the Universe. The alternative position, as represented by what is now most usually entitled 'naturalism' is that these values emerge, and begin to vindicate their reality only at some late stage in a process of evolution."[1]

Perhaps the contrast between idealism and naturalism in this domain gives the most illuminating terminology. And yet other terms may assist us in grasping the contrast. We may speak of idealism in regard to values as *transcendentalism* or the cosmic location of values, while the opposed view may be called *humanism*. We may say that, in transcendentalism, there is the inclination toward singularism or a monarchical concentration and control of values, while humanism is pluralistic and dispersive.

A few examples may make all this clearer. Suppose that we take Plato and Emerson as witnesses to the transcendentalist position. It is undeniable that this has been an influential doctrine in the past and that it is still the commonest, perhaps because it is the traditional view and harmonizes best with the customary perspective of both religion and politics.

In the *Republic* we have the following passage: "Now this power, which supplies the objects of real knowledge with the truth that is in them, and which renders to him who knows

[1] N. K. Smith, *Prolegomena to an Idealistic Theory of Knowledge* p. 1. It may be noted that Professor Smith's theory of knowledge, itself is realistic.

them the faculty of knowing them, you must consider to be the essential Form of the Good, and you must consider it as the origin of science, and of truth, so far as the latter comes within the range of knowledge: and though knowledge and truth are both very beautiful things, you will be right in looking upon good as something distinct from them, and even more beautiful . . . the good, far from being identical with real existence, actually transcends it in dignity and power."[1]

And in Emerson we have a similar, exultant mysticism: "Meantime within man is the soul of the whole; the wise silence; the universal beauty, to which every part and particle is equally related; the eternal One. And this deep power in which we exist and whose beatitude is all accessible to us, is not only self-sufficing and perfect in every hour, but the act of seeing and the thing seen, the seer and the spectacle, the subject and the object, are one."[2] It is well-known that Emerson was much influenced in his thinking by Plato.

The humanistic, naturalistic position is a more recent one and does not have the august tradition back of it that transcendentalism has. Its great writers are still to come. Perhaps the following quotation from Maeterlinck expresses something of its spirit: "If all who may count themselves happy were to tell, very simply, what it was that brought happiness to them, the others would see that between sorrow and joy the difference is but as between a gladsome, enlightened acceptance of life and a hostile, gloomy submission, between a large and harmonious conception of life and one that is stubborn and narrow. 'Is that all?' the unhappy would cry. 'But we too have within us then, the elements of this happiness?' Surely, you have them within you. . . . It is true that on certain external events our influence is of the feeblest, but we have all-powerful action on that which these events shall become in ourselves—in other words, on their

[1] Plato, *The Republic*, sec. 509, *passim*.
[2] Emerson, *The Over-Soul*.

spiritual part, on what is radiant, undying within them."[1] Though less contemplative, pragmatism has much of this spirit of stress upon actual living and its intrinsic values. Perhaps a quotation from an address which I gave a year or so ago may not be out of place: "It would seem, then, that naturalism is becoming the positive and reductive term for thought. But naturalism must be filled out by the inclusion of human life and thus rise to humanism. It has been the supposedly negative and forbidding atmosphere of naturalism which has, perhaps, rendered many people desperate adherents of supernaturalism. They have felt themselves hanging over an abyss of mechanical processes which had no relationship to value. And this was philosophy's fault which it is only now beginning to correct. Surely the world is beautiful as well as ugly, satisfying as well as adverse. We can find means to accomplish what we greatly desire; and this control and direction of events depends largely on man's intelligence. Nature does not merely tolerate man for it has produced him."[2]

We shall have in mind, then, this contrast between transcendentalism and naturalistic humanism. To make any advance we must analyze judgments of value and value-experiences.

Valuation versus Cognition.—The valuation of an object is not identical with the cognition of it even though, at the level of practice, the two are intermingled in what we may call a personal interpretation of the object. The more we isolate pure cognition, that is, reflective cognition in which the aim is consciously to know the object, the more we become aware by contrast of the nature of valuation.

Only certain data are valuable for pure cognition, that is further our intent to grasp the nature and characteristic of the object as it exists in its own right and in its actual rela-

[1] *Wisdom and Destiny*, pp. 8-9, 29.

[2] The Emergence of Naturalism, *The International Journal of Ethics* July, 1924.

tions. In knowing, we seek to get at the object in an impersonal sort of way, to become spectators of the object. To accomplish this purpose is no easy thing, as the gradual development of scientific technique shows. And we must not confuse results with means. While it sounds very quietistic to speak of contemplating nature, actually it is not so. Man has served a very long apprenticeship in this art. And the apparent simplicity and clarity of scientific contemplation of the world is, like the simplicity of great plastic art, purchased at the price of effort. Knowledge is not an intuition but an achievement; yet, when it is achieved, it claims to present the actual characteristics of things as they are in their own domain of being.

Now feelings, emotions and desires are not cognitional data for external objects. It is for this reason that we must call them data *extrinsic to scientific cognition.* But they are significant for the valuation of external things. Why? Because they indicate the bearing of these things upon ourselves as centres of desire. Valuation is centripetal to living centres that strive and feel and estimate.

In cognition we hold ourselves aloof from objects and restrain and hold in abeyance those direct relations and interests which are characteristic of living. In short, in pure cognition we temporarily inhibit desires and activities which are directed toward objects in a concrete, participative sort of way and try to understand what they are, what their structure and properties should be conceived as. On the contrary, in the usual run of living we are agents adjusting ourselves to the things around us, using, avoiding and enjoying them. How shall I put it? In living, we have no sense of abrupt separation between ourselves and things. We cooperate with other persons, we handle objects, we move them, alter them, enjoy them, fear them. We are *with* things. Action emphasizes our relations with the world while cognition emphasizes our distinctness so far as existence is concerned.

Just because modern philosophy has been so closely linked

up with the advance of the physical sciences, it has been dominated by the outlook of pure cognition. Man has tended under these influences to think of himself as a sort of disembodied mind peering at the world. And as the world was long thought of as a purely mechanical, dead-level system, it is not to be wondered at that man felt himself alienated from physical reality. The dualistic view of the mind-body relation, which made the mind something entirely separate from the body, would obviously fit in with this tendency to think of mind as only spectator and not as participant.

But one of the great discoveries of recent philosophy—strange as it may seem—has been the *realization that living, and not knowing, is the primary fact and the proper point of departure for a philosophy of values.* In these matters the proper perspective came but slowly. A glance at the history of philosophy may help us.

Kant separated very sharply the realm of knowledge from the realm of will. The *Critique of Pure Reason* dealt with nature and regarded it as a phenomenal construction dominated by the category of causality. As a part of nature, man was determined in all his actions. But in the second Critique, that of the *Practical Reason,* man was regarded as noumenal and free. The problem, inherited by Kant's successors, was to show how man could be free and determined at the same time. Gradually there arose what may be called a voluntaristic type of philosophy which laid stress upon the will. It was natural for this movement to be idealistic in its epistemology and to look upon nature as a realm of appearance.

Along these lines there developed the romantic movement in philosophy which culminated in the work of men like Nietzsche, Bergson and Eucken. These thinkers stressed the creative element in human life and called attention to the important part played by will and feeling. In epistemology they swung rather vaguely between idealism and realism, idealism, on the whole, predominating; and in cos-

mology, they alternated between spiritualism and dualism. Thus Nietzsche, on the whole, belonged to the voluntaristic movement inaugurated by Schopenhauer, while Bergson is a vitalist, that is, a believer in a life-force which molds the inorganic realm. Eucken falls more into line with Fichte and post-Kantian idealism, as he calls himself an activist.

It was in America that pragmatism secured its chief development and strength. Having much in common with these voluntaristic movements, it yet differed from them in its emphasis upon a biological view of life and mind. In other words, it was more empirical and naturalistic than early voluntarism had been. It was also temporalistic and inclined to stress actual human living and human situations.

It is not necessary for us to determine priority in these matters. Suffice it to point out that Nietzsche, Bergson, James, Schiller and Dewey all tend to regard living as something more comprehensive than knowing. Knowing is an instrument of living rather than something separate. In this, I think that they were undoubtedly right although the thesis needs careful definition. Knowing is not something which goes on of itself. It must rest in, and spring from, the active curiosity and interest of a being who participates in nature. We strive, desire, love, hate, create, dream. Each of us is a centre of existence impinging upon others and in active relations with an environment and, by that very fact, full of the warmth of feeling and directed interest. Knowing is, then, a differentiated activity grounded in the nature and setting of life and developed to a high level. It is always sustained by interest.

The danger in this movement was to suppose that because living is the fundamental human category knowledge could not be knowledge. There was a tendency to deny the reality of cognitive contemplation and the interest in pure cognition. It is probable that certain inadequacies in the epistemology and cosmology of the time encouraged this hostility to knowledge.

The point in all this for us is the realization that participative living is a basic feature of human life and that valuation is bound up with this characteristic. We desire things and situations; we build up ideals of conduct; we create in various sensuous media rhythmic forms which we enjoy; we establish social institutions which further our ends. In short, we are agents actively expressing ourselves in relation to a physical and social environment. We must give up, once for all, the shadowy conception of ourselves as disembodied minds merely contemplating the world. Contemplation is, itself, an activity of a highly differentiated sort sustained by the whole organism.

Let me hint for a moment at the consequences of this outlook. First, the human organism is an agent in nature and, therefore, nature cannot be, as Kant supposed, a mere mechanism. Our evolutionary view with its acceptance of levels helps us here. In the second place, valuation is a necessary ingredient in human living with its desires and sentiments. To value objects is in a sense more primary than knowing as such, because knowing is at first largely a means to action. Pure cognition and the valuation of it is an achievement. Let us come back to ordinary perception with this point in mind.

It will, I hope, be remembered that we said that ordinary perception is practical and concerned with the adjustment of the organism to its situation. Objects are experienced in what we may call an *appreciative perception*. They are suffused with *value-meanings*. An apple is something good to eat as well as something round and red. A person is some one to have affection for or to fear as well as an individual of a certain height and having black hair. We may say that primary interpretation is at one and the same time cognitional and valuational and that cognition guides valuation. In this sense, we may say that valuation involves the employment of two sets of data, one cognitional and the other volitional and affective. The cognitional data are more or

the nature of sense-data and are stressed in differentiated, or pure, cognition as in science. We may call pure cognition a specialization. More peculiarly valuational are such elements as feelings and desires. These are extrinsic to the knowledge of an object but are essential to valuation. On the other hand, I think that it is undeniable that feeling and desire alone are not quite sufficient for the valuation of an object. These must be guided and directed by knowledge.

We must, then, acknowledge that we value objects that we know by means of additional data irrelevant to knowledge as such. If this is true, valuation as an act is as objective in its direction as is cognition. When we say that an act is good or that a picture is beautiful, it is the act and the picture that we are valuing. It is not our feeling that is good or our experience that is beautiful. Our feelings, desires and interests are conditions of the assignment of value to an object but they are not themselves the objects of valuation in these cases. There is the same objective reference in valuation as in cognition, and, in both cases, it seems to me to rest upon our directed organic response to the things around us. And there is no conflict here as soon as we realize that cognition is not valuation and that valuation is not cognition. Intimately as they influence one another in the whole of life, they are qualitatively distinguishable. In pure cognition, we are seeking to grasp the characteristics of objects as these are in some sense intrinsic to them; in valuation, we are seeking to interpret objects as they enter our experience and connect up with our lives. But we begin with an interpretation of objects which represents a fusion of undeveloped cognition and undeveloped valuation.

While, in science, we pass to a methodical development of the possibilities of cognition and attain critical knowledge, we may be said in ethics and æsthetics to seek to advance to a method for the development of a critical type of valuation. Reason and reflection have their part to play in the activities of valuation just as they have in the differentiated activity

of pure cognition. Moral experience and reflection teach us to call acts bad which were formerly called good or indifferent. And the trained artist knows the sentimental and shoddy from that which is æsthetically satisfying. There is critical growth in both sorts of activities.

Contemporary Theories of Value.—Let us now examine some recent theories of value. We shall find that epistemological theories have played their part. And the clarification which critical realism has introduced into our thinking will be of assistance here. At any rate, we shall find that we can regard valuations as objective in their reference even while we recognize that the data essential to valuation are essentially human and social. It is a curious fact that we shall find the neo-realists divided among themselves on the question of value.

Let us begin with idealism. The tendency to identify value and existence, or even to put value above existence, which we saw characteristic of the *ethical metaphysics* or transcendentalism of Plato, has continued a feature of idealistic philosophy ever since. It underlies the "back to Plato" movement of modern idealism under the stress of the growth of realistic epistemology. But the world of space and time cannot be so easily discarded to-day as it was by Plato. Yet if you are, like the idealist, unable to believe in objects which transcend the consciousness of individual minds, it is not unnatural to say that existence has meaning, value or significance as an intrinsic part of it. In this you would be calling attention to what I have called appreciative perception.

In his *Outspoken Essays,* Dean Inge makes the following statement: "The ultimate identity of existence and value is a venture of faith to which speculative idealism is committed." To which Professor Muirhead, another speculative idealist, adds the comment: "He clearly means reality and not existence in time." But is there any reality outside the space-time system? It is evident how quickly we get back to epistemology and cosmology.

Professor Mackenzie is another writer upon values who faces the implications of the growth of realism. In a chapter entitled "Cosmism or Axiological Idealism" in a recent work on values,[1] he writes as follows: "First of all it is very important to be clear that by Idealism we are not to understand a doctrine that denies the reality of the spatio-temporal system. . . . At any rate, most modern idealists do not maintain that all is mind or spirit, but only that *all* has to be interpreted in the light of a spiritual principle. And this can hardly mean anything else than that the principle of interpretation is to be sought in human values, rather than in material conditions." Is there not danger of anthropomorphism in this contention?

Idealism has been such an important and vigorous movement that it would be unwise not to give other instances of the idealistic view of values. Sir Henry Jones in his recent Gifford Lectures, based largely on the teaching of Edward Caird, advocates a position very much like Mackenzie's. It contains the conception of a Power that shapes the Universe in accordance with truth, goodness and beauty. But how can we pass from such a transcendent Power to our actual human values? Mackenzie admits the difficulty and, like Sir Henry Jones, falls back on the poetic insights of Browning.

The suspicion will not down that these writers bow to the space-time system, call it real—more real than Plato admitted—and then delve underneath it to a Power or Ground which is the real reality. Professor Sorley does very much the same thing that Mackenzie and Jones did. In his *Moral Values and the Idea of God,* he writes: "By ultimate reality is not meant material existents, or even the realm of persons, but that which is the *ground* of everything that is real."[2] It is the same procedure. We saw in our cosmology that Lloyd Morgan argued in the same fashion. It is the assumption that physical systems are contingent and existentially secondary, that there

[1] J. S. Mackenzie, *Ultimate Values*, p. 155.
[2] Sorley, *Moral Values and the Idea of God*, p. 509.

is a sort of fourth dimension back of them in which the springs of change are to be located. In short, that changes are not expressions of the nature of the spatio-temporal system but of something more real underlying it. Let me frankly say that I cannot—with the best desire in the world—see adequate grounds for this assumption that physical systems are not self-sufficient. It is a basic question, however, and the student should think over both sides of the question very carefully.

It is clear that cosmic idealism is closely akin to what we called transcendentalism and tends to have a singularistic, monarchical conception of the cosmic locus of values.

Let us next examine neo-realism. Neo-realism is divided against itself on the question of values, some writers keeping close to Platonism, while others approach pragmatism in these matters.

An instance of the facility with which neo-realism lends itself to Platonism is to be found in Spaulding's *The New Rationalism:* "The answer to these inquiries is almost as old as man's own philosophizing, and is one that unites modern Realism with ancient Idealism. It is, that *ideals are real.* Plato was and still remains the great spokesman. Eternal are justice and goodness and truth, not because they persist through all time, but 'because in a heaven by themselves' they partake neither of the nature of 'things' that are in space and time, nor, indeed of the nature of time and space themselves."[1] I would say in contrast that ideals are to me objectives of the human personality arising out of our living experience rather than timeless entities. To make an ideal into an entity seems to me to misunderstand the setting of constructive valuation. But more of that later.

Much of neo-realism has, I think, confused cognition and valuation. I shall examine the work of Laird and G. E. Moore, two English thinkers, from this angle.

In his *"A Study in Realism"* Laird asserts that value belongs to objects "in the same sense as redness belongs to a

[1] Spaulding, *The New Rationalism*, p. 498.

cherry." I judge that this statement means that value is an intrinsic quality of an object which the adjusted mind will discern.

At the level of practical, or appreciative, perception, this statement is essentially correct. The content of perception contains redness and is suffused with feelings and desires. At this level, the meanings of things are affective and volitional as well as cognitional. Interpretation is naturally as directly valuational as cognitional. But I am convinced that reflection forces us later to distinguish between value-meanings and the terms of a cognitional type by which we think the nature of the object. It is clear that this is the point of divergence between naïve and critical realism.

I shall now take up G. E. Moore's position in detail because it will bring out by contrast the outlook which we are inclined to favor. Moreover, he has given naturalism a certain arbitrary meaning which may mislead the student if his attention is not called to it.

In his *Principia Ethica,* a very stimulating though necessarily technical book, Moore identifies naturalism with the view that the value 'good' is a natural property of things. He writes: "Whether good is defined as yellow or green or blue, as loud or soft, as round or square, as sweet or bitter, as productive of life or productive of pleasure, as willed or desired or felt: whichever of these or of any other object in the world, good may be held to mean, the theory which holds it to mean them will be a naturalistic theory." Thus Moore believes that the mistake—shall we say of past naturalism?—is to identify value with a literal existent, or natural, property of things, like vitality, productivity, or pleasure. These may be goods, that is, good things, but they are not what we mean by good as a predicate as when we say that an act is good.

This logical analysis, inaugurated by Moore, which led to the emphasis upon the distinction between goods, or things which are good, and good as a predicate has been of decided benefit to axiology or theory of value. In the assignment of

value, we are not discovering some intrinsic quality. For instance, to say that pleasure is good under certain circumstances is not similar to saying that pleasure has a variable intensity. Nor does it seem possible to find any feature in objects which is always present when we assert that they are good. While I recognize that naïve naturalism has at times been guilty of this fallacy, it is not essential to naturalism. Another quotation from Moore will make this clear: "I have thus appropriated the name Naturalism to a particular method of approaching Ethics—a method which, strictly understood, is inconsistent with the possibility of any Ethics whatsoever. This method consists in substituting for 'good' some one property of a natural object or a collection of natural objects; *and in thus replacing Ethics by some one of the natural sciences.*"[1]

Very curiously, this sounds like a recognition of the distinction which I have made between cognition and valuation. The natural sciences stress cognitional judgments because their purpose is that of knowledge of things and events. But we saw that, in living as a whole, we are concerned more with valuation and action than with pure cognition.

But Moore is so dominated by epistemology that he does not employ this distinction and regards 'good' as a "non-natural, indefinable, *intrinsic* property of certain natural objects." It is non-natural because it cannot exist by itself in time. Yet it is always bound up with an object. It is indefinable like the quality, yellow, because it cannot be analyzed. But does not this conclusion leave us with a mystery? If there is some unique quality which objects always possess, if they are good, how do we discover its presence? Can it be recognized without a sense-datum? Or is it a peculiar kind of sense-datum? The whole doctrine seems to me very puzzling. Would it not assist Moore's intention to recognize predicates which are not intrinsic to objects in a cognitional way and yet are interpretative of them as linked up with living centres. For us, also,

[1] G. E. Moore, *Principia Ethica*, p. 40.

'good' is a non-physical property because it is not there to be recognized by a cognitional process. Acts, for instance, are not good out of relation to human beings.

Professor S. Alexander, although a neo-realist, represents a movement toward a recognition of the relational, experiential view of values which I have been advocating. I shall neglect technical differences between his formulations and my own and stress the agreement. Let me quote a passage to bring out this recognition of the prime importance of the relationship of objects to living centres if they are to have values. "Things are good only in so far as we extract their goodness by using them to our purposes. That physical things are beautiful only in relation to us is a proposition which may seem paradoxical and even revolting, and it needs and shall receive its justification, when it will be seen that a landscape has beauty not in and by itself, but in the same way as a poem has beauty, which is made by a man and when it has been made is also a physical thing, outside the maker. That truth and reality are not the same thing, but that truth belongs to real propositions only in their relation to mind, may seem to some obvious and to others false, but I shall maintain that, though not obvious it is true. . . . Values, then, are unlike the empirical qualities of external things, shape, or fragrance, or life; they imply the amalgamation of the object with the human appreciation of it."[1] In all this I heartily agree though I am a wee bit skeptical of this term amalgamation. If it means that we as living beings connect up with things and that we interpret them in relation to our lives through a union of cognitional data and value-data, I quite agree.

There are many other interesting writers on the subject of values to-day. Among these I might mention John Dewey, R. B. Perry, David Prall, George Santayana, Picard, Bouglé. It is to be hoped that the student will have developed enough interest in the subject to go on and read further in it for himself.

[1] S. Alexander, *Space, Time and Deity*, vol. 2, pp. 278-9.

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CHAPTER XXIX

KINDS, CONDITIONS, AND CRITERIA OF VALUE

Valuation an Intrinsic Aspect of Living.—Our investigations into the general character of values have convinced us that they are objective after their own kind. Perhaps this fact can be best brought out by saying that values are *objects valued*. These objects may be of very different kinds, such as physical things, technical methods, human aims, social organizations, ideals. In every instance, individuals and groups envisage something perceivable or conceivable as an object and respond to it in the way of estimation or prizing. It would seem, then, that the value which any object has in our eyes is our interpretation of it in relation to the function it performs, or can perform, in our lives. Our knowledge enters in, but more than knowledge is involved. Our feelings, our desires, our habits, our expectations, our needs play their part in this vital interpretation of objects.

Following this clue, we have tried to show that the categories of valuation have a quite different sort of setting than those of cognition. In cognition by itself, we locate things in space, indicate their internal structure and their causal capacities, perhaps trace their history and predict their future. All this comes out very clearly in the inorganic sciences. In valuation, on the other hand, we are estimating objects in relation to ourselves and to all that bears upon us. We are now, consciously or unconsciously, egocentric and sociocentric. In other words, in valuation we are living with things, taking up attitudes toward them, relating them to our desires and aims. We are expressing ourselves in them, connecting them with

our suffering and doing. It is this difference of perspective and purpose which, as we saw, distinguishes pure cognition from valuation.

Perhaps an example or so may make all this clearer. Let us take, for instance, this description by Arthur Symons of the art of Guy de Maupassant: "Every artist has his own vision of the world. Maupassant's vision was of solid superficies, of texture which his hands could touch, of action which his mind could comprehend from the mere sight of its incidents. He saw the world as the Dutch painters saw it, and he was as great a master of form, of rich and sober colour, of the imitation of the outward gestures of life, and of the fashion of external things. He had the same view of humanity, and shows us, with the same indifference, the same violent ferment of life, the life of full-blooded people who have to elbow their way through the world. His sense of desire, of greed, of all the baser passions, was profound; he had the terrible logic of animalism. Love-making, drunkenness, cheating, quarreling, the mere idleness of sitting drowsily in a chair, the gross life of the farmyard and the fields, civic dissensions, the sordid provincial dance of the seven deadly sins, he saw in the same direct, unilluminating way as the Dutch painters; finding, indeed, no beauty in any of these things, *but getting his beauty in the deft arangement of them, in the mere act* of placing them in a picture."[1] We may say that the artist finds delight in significantly arranging material which consists of primary human values, such as affection, love of money, hate, jealousy. This is the raw stuff of literary art.

In education, again, it is coming to be recognized that the primary question is one of *objectives*. What do we wish to achieve by our educational institutions? Are there relatively diverse aims? And can there be wise accommodations of these aims? Is it the aim of education to enable people to have insight into themselves and the world which surrounds them and to achieve a wise system of values? Or is it better

[1] Symons, *Studies in Prose and Verse*, p. 97.

to demand that education be quickly subservient to the making of money?

Again, any voluntary group has its values, the things it holds dear and aims to realize. Art clubs dedicate themselves to the artistic development of their members. Scientific associations have similar objectives with regard to the advance of scientific knowledge. And how many groups there are, each with its particular aim! So far as an individual is a member of such groups, he has a value in common with other members; he shares their values.

Political groups are only partly voluntary because they are so basic. But we can note that, as Americans, we share certain valuations. We believe the method of counting votes to determine majorities superior to overt revolutions. We believe that free discussion is valuable if new situations are to be met and minds kept flexible. And so we value our traditional institutions, although not blindly and unaware that new conditions may demand important modifications.

Now, in all these instances, we can notice ends, or objectives, which are settled upon as desirable, and we can also note methods and institutions which are also regarded as desirable because they assist these ends or objectives. It is this sense of the relatively desirable, this ability to construct scales, or hierarchies, of objectives, which stands out in both personal and social living. Life reaches out, grows and creates. It is a centre of appropriation and expression.

Value in Aesthetic Experience.—Since we have already discussed the general character of moral values, it way be well to linger for a moment upon another type, the kind of value-experience found in art and thence in nature as contemplated.

Those who have devoted themselves to an analysis of the aesthetic experience emphasize its unhurried, contemplative character. He who enjoys a landscape, for instance, is absorbed in the colored pattern which is spread before his eyes. He is not trying to do something practical, to estimate the quality of the soil, the geological character of the rocks, the

distance from town. Rather is he aware of color harmonies and delightful blendings of perspectives which satisfy.

"The simplest aesthetic experience," writes Bosanquet, "is, to begin with, a pleasant feeling, or a feeling of something pleasant—when we attend to it, it begins to be the latter." He then proceeds to point out that there are at least three chief characteristics of this experience. It is a *stable* feeling; it is a *relevant* feeling; and it is a *common* feeling. All this means that it is well-organized, connected with objects having definite characteristics, say of form, and experienced by all those who have developed their capacity of vision, feeling and insight. Summing up his analysis, Bosanquet writes: "So far the aesthetic attitude seems to be something like this: preoccupation with a pleasant feeling, embodied in an object which can be contemplated, and so obedient to the laws of an object; and by an object is meant an *appearance* presented to us through perception or imagination."[1]

It is upon this latter statement that we shall linger a moment. In art, we are not trying to know nature as the scientist conceives it. We are concerned with the object as it appears in our experience as a sensuous presentation capable of evoking and absorbing certain elements in our nature. Aesthetic contemplation is not passive but creative. And in art we mould objects until they express as perfectly as possible what we demand in the way of form, order and harmony. Note well the difference. In scientific cognition we are dominated by the purpose to know what is out there. Our methods and technique are set by this aim. In art, it is otherwise. The aim of art is not to copy what already exists but to create something delightful and expressive. Those who do not realize this fact are unable to appreciate much of the newer painting. They look for resemblance, for agreement with things as they remember them, and they are shocked by the colored pattern which is offered to them. They seek to look through it at things and not to rest in the appearance by itself.

[1] Bosanquet, *Three Lectures on Aesthetics*, lect. 1.

A quotation or two from recent works on aesthetics may bring out the specific aim of art more clearly. "Art in general," writes Buermeyer, "is an expression of emotion, an expression which consists not, as with ordinary expressions in gestures, exclamations, or physically efficacious acts, but in an envisagement of the moving object in the terms or qualities that the emotion has seized upon and laid bare as significant. The object, so envisaged, is never identical with the object as it exists independently, either as a physical thing or as it is conventionally perceived. Rather, the aesthetic object is such a reorganization of conventional impressions, a reinterpretation of familiar fact, as well reveal their distinctive significance for feeling or emotion."[1] In a similar vein, Parker writes as follows: "This same purpose of affording pleasure in sympathetic vision leads the artist not only to present the unity of life, but so to organize its material that it will be clear to the mind which perceives it. . . . Hence the artist infuses into the world which he creates a new and wholly subjective simplicity and unity, *to which there is no parallel in nature.*"[2]

Psychologist and aesthetician have devoted themselves to an analysis of the aesthetic experience. The student who finds the subject interesting will discover admirable material in the books just cited and in those of Vernon Lee, Croce, Valentine, Bullough, Langfeld and Carritt. There are tendencies, feelings, patterns, emotional adjustments back of the experience of beauty. No one who has studied to the full the artistic side of man's nature can regard it as something artificial. Art springs out of human living and deepens it. It is, in short, a cultural emergence. Man is a child of nature to the full, while possessed of the capacity to create works of art which improve upon nature in their emotional appeal.

Within experience or as experienced, then, the object has been transformed. Perhaps, it would be less misleading to say that the object has been reflected into the domain of the per-

[1] Buermeyer, *The Aesthetic Experience*, chap. 1.
[2] Parker, *The Principles of Aesthetics*, p. 83.

cipient organism. And, as so reflected, the thing acquires qualities which it does not intrinsically possess, like color, perceptual size, perfume, etc. And it does not take us long to realize that the sensible thing of naïve realism has fused with its sensory qualities other more emotional qualities like expressiveness, desirableness, peacefulness, usefulness, charm. This primitive realism is puzzling to the scientifically trained man because he is not philosopher enough to realize that he has been trying to penetrate beyond this complex of appearance and value to a critical knowledge of the thing in its own locus and domain. The idealist, on the other hand, looks upon this critical knowledge as an abstraction from concrete experience and not as a purified cognition of an external order. Does not critical realism offer the best perspective?

In valuation, then, we drop back into living. We are not indulging in knowing for its own sake; rather are we creators and doers. And it is in this relationship that the basic truth of pluralism comes home. We are located *in* the world and live in it as an environment. But the pluralism, thus suggested, is not a disjointed, atomic pluralism but one of interconnection and the active, mutual adjustment of parts. If, in his analysis of cognition, the realist must stress the distinctness of object and knower, it does not follow that, as realities, the thing known and the thing knowing may not live together and affect one another. While we are cognizing we inhibit for the time being our practical relations with things. Even in the aesthetic attitude there is something of this withdrawal. It has been called psychical distance. It seems to me to come out clearly in the mood of Matthew Arnold's poem, *Resignation*. He is describing the life of the poet.

> "He sees the gentle stir of birth
> When morning purifies the earth;
> He leans upon a gate and sees
> The pastures, and the quiet trees.
> Low, woody hill, with gracious bound,
> Folds the still valley almost round;
> The cuckoo, loud on some high lawn,
> Is answer'd from the depths of dawn;

In the hedge straggling to the stream,
Pale, dew-drench'd, half-shut roses gleam;
But, where the farther side slopes down,
He sees the drowsy new-waked clown
In his white, quaint-embroider'd frock
Make, whistling, tow'rd his mist-wreathed flock—
Slowly, behind his heavy tread,
The wet, flowr'd grass heaves up its head.
Lean'd on his gate, he gazes—tears
Are in his eyes, and in his ears
The murmur of a thousand years."

A General Survey of Values.—There have been many classifications of values. Since our present purpose is not an exhaustive analysis of the subject but, rather, an indication of the nature of the field, any one of these would serve. Let us bear in mind the fact that human interests, desires and feelings lie back of values and, in part, control them.

We can begin with the values which we have in common with the brutes but which the development of culture has raised to a higher level involving refinement and greater complexity; and we can then pass to values which depend upon distinctly human abilities and relations. It will be noted that the group as an historical growth comes more and more to the fore. The more specialized values come last in the list.

1. Bodily values.
2. Values of primary association.
3. Economic values.
4. Political values.
5. Aesthetic values.
6. Religious values.
7. Moral values.
8. Intellectual values.

This list is, I think, suggestive; and yet we must carefully note certain supplementary distinctions. In the first place, we must distinguish between individual and group values. Secondly, we must contrast immediate with reflective values. And lastly we must put plus or positive values over against minus or negative values. These, and other necessary points, we shall take up later.

Bodily values are relatively immediate and, as we say, sensuous. We have here the bodily joys of life, tasty food, fresh air, the joy of exercise, the more elementary pleasures of sex, pleasant sounds, alertness of life. We should not belittle these primary sensuous values, which we experience as healthy, sensitive organisms moving about in our world. Thus bodily tone and enjoyment suffuses our life with well-being. Things take on a pleasant aspect as we respond to them healthily and normally. We need but think of the first bland days of spring or of a well-earned vacation. Let me in this connection quote the paean of joy in life which came from the pen of one of our most intellectual poets:

"Oh, the wild joys of living! the leaping from rock up to rock,
The strong rending of boughs from the fir-tree, the cool, silver shock
Of the plunge in a pool's living water, the hunt of the bear,
And the sultriness showing the lion is couched in his lair,
And the meal, the rich dates yellowed over with gold-dust divine,
.....
How good is man's life, the mere living!"

It is a well-known adage, that of a sound mind in a sound body. The foundation must not be belittled.

The values of recreation go with the employment of body and mind as in games and walking. These lead to the values of association with affection, love, rivalry, discourse.

But man must also work and plan, and society has gradually developed various kinds of labor and various enterprises aimed at the satisfaction of man's needs by means of effort and applied intelligence. Hence civic and economic values emerge.

And so we pass up the scale to highly developed art with its craftsmanship and trained taste, to religious ceremonies and acts in which the individual supposedly enters into relations of association with superhuman powers, to science and philosophy with their technique and ability to call out in pleasant operation the intellectual powers, to morality with its attempt to avaluate and adjust to one another these manifold values and activities.

This brief indication of the presence in the field of values of the desires, activities and interests which appear as intrinsic to human life, may serve to direct the student to an empirical analysis of his own living. He will find it a complex whole shifting from hour to hour and from day to day and containing in itself the enjoyments of food and drink, exercise, companionship, ambitions, work, the solution of moral problems, art, an imaginative sense of the world. And there are sorrows as well as joys, lean stretches of life as well as fat, well-favored ones. And he will find that imagination, knowledge and insight pass downward to transform the more primary activities. It is in some measure the whole personality which expresses itself in all these values.

There are various angles from which human values may be approached and various divisions which may be made. Thus we may speak of *negative* and of *positive values.* A moment of life or an act which is painful or harmful has negative value. We look back at it, perhaps, and say to ourselves that it was something we would be glad to forget or something we would like to rectify. And other activities are quite the reverse; we enjoy them and we also see that they have had results of a favorable sort in our lives. Another division is that between *intrinsic* and *extrinsic,* or instrumental, values. An act or a moment of life has intrinsic value when it is felt to be satisfactory in itself. A walk on a bright day in fall, a bit of intellectual analysis, a talk with a charming friend, all these bits of living have intrinsic value. They may, of course, also have extrinsic value for the one does not exclude the other. But we think of extrinsic value chiefly when we regard things and actions as means to ends which satisfy us. Thus for a great many their work has too little intrinsic value. It is chiefly a method of obtaining the necessaries of life. And there is bound to be much of our living with this note of mere instrumentality in it. Fortunate is an individual in whose life instrumental value and intrinsic value merge, who loves his work and sees significance in what he does.

We have thus far dealt with what may be called personal values. We have taken the educated member of society and asked ourselves what are some of the chief values in his life. But, besides private values, there are public, or group, values and the standards set up in connection with institutions. As a member of the teaching profession, I estimate certain activities in definite ways. As an American, again, I am concerned with the social and political life of my country and agree with others on remedial measures. Again, institutions are represented by officials who identify themselves with their history and purposes. For them, certain forms are the valid ones and deviation from them is to be condemned. We can note conventional institutional valuations in art, politics, the church, banks, literature. These institutions have a momentum of their own against which the individual reformer is largely helpless unless conditions are especially favorable to change.

Let us pass now to a close study of the conditions of particular valuations. We shall see that valuations have their definite conditions and are not whimsical and arbitrary. They are expressions of human living in the kind of a world we are in.

Is it not true that I *discover* that I like certain things, actions and activities? Thus I enjoy the contemplation of certain arrangements and color combinations. Again, I may be moved by certain actions to keen enjoyment. For instance, I may like friends and find delight in good conversation. Individuals differ considerably in the kinds of activities they are attracted to. Some like to handle machines and do work out of doors; others prefer books. We have here personal equations which are in some measure innate, although they are undoubtedly affected by subtle suggestions and even by accident. In valuation we have to do with responsive persons who come under all sorts of influences and yet are selective in accordance with natural talents. W. H. Hudson seems to us a naturalist born, and yet the early years spent in the plains of Argentina must have had much to do with the

development of these interests. Edison, again, strikes us as a predestined inventor, and yet, surely, the United States furnished an encouraging environment. Who, again, can read the life of Shelley without feeling that he was a poet by a biological predestination?

We must distinguish between the existential field of the organism and this external complex as it is perceived, interpreted, reacted to selectively by a person. In this fashion is the *existential situation* transformed into an *experienced situation.* Only as so transformed or taken up are objects valued. And we should remember that the social environment is basic for the human individual. He always is a member of society with a given culture and institutions. A striking instance of this fact is the value assigned to a flag as a symbol of a nation's life. In itself, it is a bit of colored cloth. As a flag it means a vast historical unity of effort and expended energy. It arouses sentiments and memories. The individual life moves in the sea of social life. Important as the cosmic setting is, it but furnishes the margin or penumbra for the usual activities and enjoyments of the individual. Our field of participation is mainly social. Or, to put it more accurately, society adjusts itself to the earth and its resources and rears upon it, and in relation to it, activities of production, and distribution which again make possible the most varied interests and endeavors. Division of labor, the growth of culture and self-expression, experimentation, all play their part in the rise of systems of values.

For analytic purposes we may divide the conditions of our human valuation into human nature, culture, and the physical environment. And we must see these factors in interaction and mutual determination. Were human nature different, our values would not be the same. Were we not gregarious animals with social instincts and tendencies, were we insensitive to form and order, how different would our values be! Again, were we incapable of noting the consequences of actions and seeing the bearing of social cooperation upon our happiness,

how different our values would be! And a culture is a slow growth in which human beings have responded to situations in specific and cumulative ways, forming customs, institutions, arts, languages, and accepted virtues. And to the scientific eye, neither human nature nor culture is thinkable apart from the vast setting which nature gives. Culture is not deducible from land and sea, yet it is correlative to it. Its texture knits up with the world.

Our general conclusion is, that values arise in life through the linkage of selves with things and other selves. Such linkage takes time and is again variable because both self and situation alter. The more complex the value, the more the ramifications on which it depends and which it expresses. Only very simple, or primitive, values are close expressions of what we may call human nature. In the majority of cases, values are bound up with standards which are of slow growth and which are themselves valuations of a usually social kind. Trained taste, knowledge of relations and effects, developed sentiments play their part in sustaining values. And, ultimately, a *living value* is the expression of personality in contact with things. There is nothing in the external world to which it can be regarded as corresponding in any literal fashion.

Valuations and Value-Judgments.—The human mind has been rather puzzled by the question of the status and claims of valuations and value-judgments. It was long supposed that, somewhere in existence, there are standard values by reference to which our own could be corrected and evaluated as it were. Again, the analogy with truth and cognition was supposed to be close. We must ask ourselves the question, In what sense, if any, are value-judgments true? And we may add to this the query, By what right do we claim to correct our valuations? And what does such correction presuppose?

First of all, what is a value-judgment? There has been much difference of opinion in regard to this point. Let me

quote from a passage by Professor Perry concerning a value-judgment. "An act of liking is often spoken of as the 'judgment of value' . . . and it is commonly believed that we have to do here with a unique sort of judgment. But this belief is due to a lack of analysis. It is unique only in that it is complex. If I consciously like the Mona Lisa on the conscious supposition that it is the work of Leonardo, I may be said to judge twice. First, I judge that I like the picture. There is nothing peculiar about this judgment. It is like the judgment that I see stars . . . I can see good reasons for regarding that as a judgment of value, but none for regarding it as unique. Second, I judge that Leonardo painted the picture. There is nothing peculiar about this judgment . . . In addition to these two judgments my complex state of mind contains my liking of the picture."[1]

Now I have argued that the value-quality which suffuses an object is a meaning in which the object is interpreted. Thus when I say that an object is beautiful, I am thinking of the picture as I experience it. It comes up to my expectations, it has nicety of design, harmony of coloring, expression. It is undeniable that I can shift back to my attitude and say that I like the picture. Nevertheless, I do think that my ordinary experience is one of immersion in the picture as an appearance, a pleased noting of its artistic features. An æsthetic judgment of value seems, then, to me to be a translation and rendering explicit this living valuation of the object. And we do have the predicate, beautiful, to express this value-meaning which arises in us. And we should note that our experience is guided and illuminated by perceptual discriminations. We are living with the object and take it up into our experience. It is, I think, the unwillingness to realize the difference between pure cognition and other more participative treatments of objects that causes the difficulty. Yet it is true that a value-judgment but expresses what we experience. It is of the nature of an *intuition*, like saying that I see this leaf as red.

[1] Perry, *Journal of Philosophy*, vol. XI, p. 161.

A judgment of value does not create; it translates. A picture is beautiful to you or it is not.

But can we not correct our judgments of value? Only by changing our experience. Another person may point out certain things that we had not noticed. We may have a larger range of pictures to examine and compare. And so gradually our taste may be improved. After some time, then, we may have so increased in discrimination and æsthetic taste as to wonder at our former liking for the picture we first enjoyed. The court of appeal will be the same, our response to the picture, but, in the meantime, we have changed and so our response has altered.

But does not this admission leave us in subjectivism? Shall we not say that each one has his own taste? Nay, even that the taste of one year may not be precisely the same as that of another year?

Are There Absolute Eternal Standards?—It is, I think, clear that for the position we have been developing there can be no absolute, eternal standards. And yet there is no reason to hold that valuations are not *conditioned* by human nature and the actual situation in which it finds itself. It seems quite possible to avoid the dilemma of either eternal and external standards or mere whim and caprice. Let us roughly indicate our own view and then state and criticize a transcendentalist position.

Personality and human nature play a justified rôle in value-experiences and value-judgments. Fortunately, these factors, while they do have a range of variation, have much the same basic pattern for all individuals. Do we not all sense a cumulative growth which convinces us that our later value-experiences are on the whole better grounded than our earlier ones? Again, experts usually reach broad general agreements. And should we desire stereotyped agreements? Is not a certain *spread* of values quite desirable?

Since value-judgments are not cognitional judgments, it seems scarcely right to use the term truth in their connection

without a recognition of this difference. We may speak of them as *sincere,* well-grounded, properly transcriptive of the personal value-experience. They are of the nature of intuitions in short, though of intuitions mediated by much besides knowledge. Yet, as expressive of the value-experience, they make a certain claim for the *adequacy of this experience and all that it assumes.* You say that this picture is more beautiful than that. This means that you claim that you are discriminating and have good taste in these matters. That may not be the case. And one who has had good training and an educated taste has a perfect right to challenge your claim. There is such a thing as growth in these matters, a clarification of æsthetic judgment, a removal of alien factors like sentiment and mere association. Beyond this, I do not think that we have the right to go. Men of good taste differ in their valuations; and yet there will usually be certain basic agreements.

Let us now examine a modern representative of the position that there are standard, eternal and necessary values somehow apart from human experience. We shall take Windelband's argument as typical of this outlook. In contrast to it we shall put our own experimental, humanistic view.

After examining what he calls the *psychogenetic* origin of values, Windelband decides that such origin is irrelevant to the question of the vindication or rationality of values. In support of this decision, he appeals to the facts of disagreement or conflict between individuals. Values are relative to the individual. They are expressions of his nature and history. "We learn that what is good for one is injurious to others; and we later, as we get on in life, realize that even what we regard as good or evil, beautiful or ugly, is not judged by others in the same way. At first we are reconciled with this great diversity in ideas of value because in the circles to which we look there is, in spite of these individual variations, a certain amount of a generally recognized standard of values, which we usually call morals . . . It is the voice of the general

consciousness in the individual, and from it we derive the law of the subjection of the individual to it . . . The primary processes of the individual, cravings, feelings and volitions, each of which contains its own appreciation of an object, are themselves subject to a higher and more deliberate type of appreciation which approves one valuation as sound and condemns another as unsound." For the first level we have according to Windelband only psychological necessity. It is simply a fact that certain objects appeal to me as desirable or pleasant or useful or beautiful. But he is convinced that these primary valuations are called in question by the general consciousness and its claim to set up a universal standard of value.

Let me interpolate a query at this point. Does not the reflective, individual mind—it may be with the assistance of other minds—criticize for concrete, experiential reasons its immediate valuations? It may have learned to discriminate better; it may have become more sensitive; it may have gained new facts. Revaluation seems to me a constant feature within the individual's consciousness.

Assuming the authority of a *general* mind over the *individual* mind, our writer goes on to point out that there are different general minds. "Ethical and aesthetic judgments display, to the mind of any unprejudiced observer, an extremely great diversity when one surveys the various peoples of the earth in succession. Here, again, however, we try to set up a final standard of values; we speak of higher and lower stages of morality or of taste in different peoples and different ages. Where do we get the standard for this judgment? And where is the mind for which these ultimate criteria are the values? If it is quite inevitable to rise above the relativity in individual appreciations and the morals of various peoples to some standard of *absolute values,* it seems necessary to pass beyond the historical manifestations of the entire human mind to some normal consciousness for which these values are values."[1]

[1] Windelband, *Introduction to Philosophy,* p. 214-6.

And now Windelband's idealistic epistemology is brought in. He had argued earlier that truth implied a *normal consciousness,* something beyond the individual consciousness and its modes of testing. "In the same way," he now writes, "our conviction that for human valuation there are absolute norms, beyond the empirical occasions of their appearance, is based upon the assumption that here also we have the sovereignty of a transcendent, rational order. As long as we would conceive these orders as contents of an actual higher mind, on the analogy of the relation we experience of consciousness to its objects and values, they have to be considered contents of an absolute reason—that is to say, God." Is there not here the tradition of authority?

This argument is very interesting because it has much in common with Platonism and Anglo-American idealism, with what we earlier called transcendentalism. Let us see now whether much cannot be said for a purely humanistic view of values.

Have we any empirical reason for setting a general mind over against the individual mind? In the chapter in which we examined this question in some detail we saw reason to deny a general, or social, mind. We must recognize—as Windelband does not seem sufficiently to do—that the appreciations of individuals are seldom blind and impulsive, but are rather the resultants of the application of relevant data. Very often, gifted individuals value things and acts differently from the way in which they were valued before, and others learn to note the new insight employed.

The reflective individual thinks and feels things out for himself. It is as we know more about causes and effects, and as we become more sensitive to others and to our own needs that moral valuations become *more adequate.* Individuals in society assist each other in thinking and feeling things through. And, of course, cultural developments make cultivated and reflective individuals possible. But I see no reason to assume transcendent, absolute values. Rather do we have the growth

of a more adequate basis for a value-interpretation in the emergence of well-informed and sensitive persons.

The analogy with cognition should cease. Values are *expressions* of conditions and capacities in the individual and in the group rather than copies of realities external to the individual. As expressions, they function in the life of the individual, or of the group. There is accommodation, adjustment, cooperation, clarification. Thus political methods are modified with more experience of their working and with a more critical sense of what can be achieved. In the same way, moral ideals are altered as individuals gain more freedom and as groups have greater flexibility. There is interplay, interdependence, cooperation, experiment, with, at the root of it all, those experiences which we call satisfaction and dissatisfaction. In short, valuations can be made more adequate to the possibilities underlying life by knowledge of consequences, by experiment, and by a deepening of personality. It is all an immanent process in which human life must be taken in its physical and cultural setting. And, in spite of the changes in valuation which occur, there is an essential continuity and basic permanence. Bodily joys and the joys of association indicate what I mean. And artistic values will rest forever upon those capacities to sense appreciatively form and significance upon which the æsthetician lays so much stress. Let us not forget that we still enjoy Homer and Theocritus and that the stories in the Bible retain their perennial appeal.

It is well, I take it, to relinquish the belief in fixed, external norms to which we must bend our lives. To conceive values as critical expressions of our nature and situation at a certain cultural level is to give them naturalness and relevance. It is to make them tentative and responsible, something to be examined and, if possible, to be improved.

Nor do I think it desirable that there should be a monotonous uniformity in the field of values. Individuals do differ both temperamentally and culturally. Complete uniformity would require regimented lives. I do not deny that human experience

shows the need of broad social control and the knowledge of certain essential consequences which it were foolish to ignore. But in all that lies beyond this minimum, voluntary cooperation and individual choice should be permitted. Intelligence and sincerity are the essential factors. I see no reason to suppose that the range of variation will be greater than it is to-day. And it may well be that a more settled society will bring in its wake more agreement.

To conclude, unlike pure cognition, valuation does not have a merely external object and goal to which to correspond. It is an essential part of the process of weaving the web of life. It is expression and adjustment. Hence, value-experiences and value-judgments should be spoken of less as true than as more or less adequate and sincere expressions and formulations of the possibilities of human life and human living.

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CHAPTER XXX

FIRST AND LAST THINGS

Queries and Suggestions.—It has been the purpose of the writer of this book to bring out the principles and problems, the structure and technique, of philosophy. Too often, it has seemed to him, has philosophy been permitted to appear a vague, inchoate, and even sentimental thing, a sort of rhapsody in prose form fitly symbolized by the picture of an old man with a long, white beard and high, wrinkled forehead. Instead, it has appeared desirable to put stress upon both analysis and comprehensiveness. Philosophy is persistent search for the truth of things, a search whose results have been cumulative even though wrong paths were sometimes taken. And we have noted that philosophical search has gone hand in hand with the special sciences, though always the aim of the philosopher has been to take a synthetic, or synoptic, view.

And now in this concluding chapter it would seem logical to gather our results together and to indicate how they bear upon first and last things. We shall do this in no spirit of dogmatism, for the philosopher is not a dogmatist. We shall merely indicate what seem to us implications and valuable suggestions. And, at the same time, we shall point out the positions taken by representatives of other philosophical schools.

The queries which inevitably arise at this stage in reflection are very similar to those dealt with in religion. We must remember, however, that philosophy is laic and secular in these matters and argues only from the broad drift of experience

and reason. We shall have in mind, then, questions concerning man's life, his degree of freedom and responsibility, his fate, his possible immortality, and questions concerning the place of values in the universe, the degree and kind of unity the world has, its friendliness or alienness to man.

The Status of the Belief in Immortality.—An immense labor has been expended on the subject of immortality, but it is to be feared that most of the books and articles are mere repetitions of what has been said before on the subject. There is, of course, the type of enquiry called "psychical research." But the methods employed have, from the standpoint of critical enquiry, been rather loose and the results scarcely convincing. Still we should keep an open mind in these matters and note what, if anything, has been accomplished. The enthusiastic amateur is often irritated by the attitude of psychologists and philosophers, which they identify with dogmatic skepticism. I do not think that it is that. Is it not hard to check up on results attained outside the laboratory with its controls? And do amateurs have the equipment in scientific technique and knowledge of both normal and abnormal psychology? There is no need to challenge the integrity of all the mediums and their impresarios. The facts of multiple personality show us that there can be unconscious deception so far as the normal personality is concerned. And cannot all the well-established facts be explained in quite ordinary ways? But we have not the space to go very deeply into this field.

An investigation carried on by Leuba, professor of psychology at Bryn Mawr, with regard to the prevalence of actual belief in immortality had interesting results. I quote from him: "We are no longer in the dark concerning the prevalence of the two main traditional religious beliefs among the intellectual leaders. A careful statistical investigation carried out in the United States, according to accepted statistical methods, has yielded the following percentages of believers:

Believers in the God of the Christian Churches	*Physical Scientists*	*Biologists*	*Psychologists*
Lesser Men	49.7	39.1	32.1
Greater Men	34.8	16.9	13.2
Believers in Immortality			
Lesser Men	57.1	45.1	26.9
Greater Men	40.0	25.4	8.8

These figures show that the belief in the God under discussion (a personal deity) is still widely prevalent among intellectual leaders in the United States. Especially significant, however, is the discovery that unbelief is very much more frequent among the more than among the less distinguished, and that not only the degree of ability but also the kind of knowledge possessed is significantly related to the rejection of these beliefs."[1]

It is undeniable that the spiritualistic tradition in philosophy and dualism are more favorable to the belief in survival than is physical realism and naturalism. It is easier for such positions to dispose of the organism. Thus a strict dualism permits the belief that the personality side is independent and can continue to exist for some time at least after death. In our own day, this outlook discloses itself in the philosophy of Bergson and partly accounts for its popular vogue. For him, mind is cumulative memory and is distinct from the brain, which is merely a complex of motor paths.

It is evident from all this that the position one takes in regard to immortality expresses one's total philosophy and one's sense of the probabilities of the case. I have discussed my own attitude elsewhere and need, I think, here give only the reference.[2] In these matters one grows into a position and the values associated with it.

We were, it will be remembered, inclined to think of mind and consciousness as operations of, and events in, the living

[1] Leuba, *The Psychology of Religious Mysticism*, p. 324. I have omitted part of the statistics for lack of room.

[2] Sellars, *The Next Step in Religion*, chap. XI.

organism. These were emergent characteristics and yet entirely natural. If so, is it probable that they survive the life of the organism? It should, however, be noted that certain thinkers who have adopted this general outlook still hold that the higher levels secure a certain self-sufficiency and existential independence. Clearly, we have here something to think over. Is the mind independent of the brain? Does the mind emerge *from* the brain? Or is the mind the cumulative, functional organization *of* the brain?

Many people love life very intensely and do not like to think of utter annihilation. I remember reading a great Spanish writer, Unamuno, who asserted that he would rather be a damned soul in hell than cease to exist. There can be little doubt that individuals and historical periods have taken different attitudes toward a future life. Many races have scarcely had the idea. And epochs which are interesting in a human way are characterized by less dwelling on death.

Life may well have its element of tragedy. The range of man's thought and the depth of his self-consciousness make possible a kind of personality which we value highly and which we dislike to see perish. And yet the facts make it doubtful that man has outgrown the mortality of other earthly things. Even old age seems to be a sort of death. It has its joys and its leisures, but it does not have the vigor and the urgent freshness of youth.

Perhaps, if from the first we thought of ourselves as purely mortal, the thought of immortality would trouble us less. We would accept life as it is and seek to make the most of it in its various seasons.

It is, I think, rather unfortunate that the Christian tradition has sought to sanction morality in terms of future punishment and reward. This perspective led many to believe that morality does not have its natural sanctions, both social and individual. In the chapters on ethics, we tried to show that the good life is the intelligent life of an individual who has values and sympathies and is a member of a social group.

The more this natural basis of morality is understood, the less the current weakening of the belief in immortality will affect actual human conduct.

In these matters, differences of opinion are stimulating. Let me quote from the writings of a contemporary psychologist who defends dualistic animism. "A proof that our life does not end with death, even though we knew nothing of the nature of the life beyond the grave, would justify the belief that we have our share in a larger scheme of things than the universe described by physical science; and this conviction must add dignity, seriousness, and significance to our lives, and must thus throw a great weight into the scale against the dangers that threaten every advanced civilization."[1]

Against this expression of opinion I would raise the question whether, in the past, a belief in immortality has not called attention away from the possibilities in this life. Injustice and discomfort were belittled because only temporary. And the great ancient civilizations flourished at a time when personal survival, if admitted, was regarded as the survival of a shade and of little consequence. But I certainly have no objection to immortality if the facts permit us to believe in it. I do think, however, that human life can be lived gloriously without it.

It would appear that the choice confronting the human mind to-day as knowledge of itself and the universe increases is that between an idealistic and a naturalistic interpretation. In the past, naturalism was regarded as a desperate and disheartening alternative. But, of recent years, naturalism has shown itself to possess possibilities which were unsuspected. This alteration is due to two things at least: the growth of the social sciences including social psychology, and the rise of a naturalistic theory of values. To think of nature in terms of the inorganic sciences only is to sweep its evolutionary apex from nature. And we have tried to show that human values are intrinsic to human living, and that human living is bound

[1] McDougall, *Body and Mind*, Introduction, p. XIV.

up with the kind of a world we are in. In short, naturalism and humanism are seen to be no longer antithetical. Let us linger for a while upon this point.

The Old versus the New Naturalism.—The older naturalism, which may well be called reductive materialism, linked its fortunes with extreme mechanicalism and sought to reduce man to a turmoil of blindly whirling atoms. It was a naturalism which linked itself with epiphenomenalism and saw no place or function for human intelligence. That such a reductive naturalism has been overcome is cause for congratulation. If it turns out that the idealist must himself qualify his own extreme principles, he may rightly claim that his ancient enemy has also suffered a partial defeat. I do think that a naturalism which acknowledges man's unique place in nature and the possibilities on the value-side of human life can be regarded as a not unsatisfactory outcome of philosophic reflection and scientific advance.

When, then, an ethical, or a religious, writer speaks of spiritual forces in the world he can be interpreted by the humanistic naturalist as referring to human sympathy, intelligent purposes and ideals as effective in human relations. Democracy at its best, internationalism, humanitarianism, the love of beauty and of knowledge, these are spiritual forces which reside in the human beings of to-day. May their influence ever be greater!

The basic thesis of all naturalism is that man is a part of nature as an orderly and self-contained spatio-temporal system. But we now see that the great mistake of early naturalism was to think reality in terms of the inorganic sciences and not to realize the tremendous importance of new levels of activity and capacity. This false perspective led to the result that the internal variety and differentiation of things was ignored. Moreover, the whole question of values was disregarded. The tremendous importance of the qualitative was forgotten. The inevitable result was that size was insidiously suggested as the measure of value. Because stupendous spaces

stretched around man and his little planet, it was implied that man's life had little *meaning*. It will be remembered how Balfour makes this implication.

But we are now critical enough to see that this term, meaning, requires analysis; and our study of value should help us here.

Can we not contrast intrinsic meaning in the sense of satisfactory objectives with meaning in the sense of a plan? May not our lives have meaning for us in the first sense even though they do not have meaning in the second sense? It is becoming rather hard to believe that there was a definite, well-thought-out plan back of human history. It all seems so much a process of trial-and-error. But if I enjoy activities and approach the warm realization of my desires, my life does contain intrinsic meaning. Objectives and goals give significance to individual lives. The value of the goal casts back value upon the person who has been furthering it. Even the humble worker in a cause feels his life absorb the meaning of the cause itself. One of the greatest, and yet popularly least appreciated, of English poets, Arnold, has well expressed this idea of the intrinsic meaning of life:

"Is it so small a thing
To have enjoy'd the sun,
To have lived light in the spring,
To have loved, to have thought, to have done;
To have advanced true friends, and beat down baffling foes—"

In our treatment of ethics we tried to show that human good is the aim of an intelligent morality.

Why Man's Realization of his Cosmic Position Has Been a Shock.—It is not difficult to understand why man's gradual realization of his cosmic position has been a shock. First came the Copernican revolution and then last century came the Darwinian revolution, one which is obviously still with us. What do these mean? Can man square old, authoritative beliefs with them?

Philosophy is, as we have said, a laic movement and makes no appeal to revelation. It is a movement of the human

reason, old by twenty-five centuries, and stands proudly beside the oldest Christian ecclesiastical organizations as older than they. Its task from the beginning has been to replace mythology by something more rational in texture. The present situation is one which it has confronted before. Let us examine the factors which demand analysis.

The facts seem to be of the following sort. Man awoke to himself and the world much as a child does but without the assistance which the child gets from parents and school. It was inevitable that dramatic myths about the *causes* of things should arise. Many of these are fascinating. Anthropologists and students of comparative religion have been tracing the origin and development of all sorts of pre-scientific beliefs.

It is no part of the task of the philosopher to go into concrete detail in regard to the development of human cultures. He must presuppose that the educated man has to-day some sense of the stages and the factors of this evolution.

The gist of the matter is, that early man socialized and anthropomorphized his world. The natural centre of man's interest was his own welfare. The group came to believe that it was surrounded by, and immersed in, *powers* of all sorts upon which its welfare depended. Dreams, trance phenomena, inability to think of complete extinction, memory, a sense of the group-life, striking natural phenomena, all these worked together to produce a belief in invisible agencies of superhuman power which, if placated, would cooperate with the group and even with the individual. And it was in terms of the powers of such superhuman agencies that man began to explain the world. The gods were the chiefs and kings of the earth. And the belief in magic, in vague and terrific powers which must be accepted and could not be understood in any other sense, made this outlook natural.

The belief that the world is governed by powers of a social nature is basic to the supernatural view of the world. It is not at all difficult for us to explain the origin of this belief nor its power over the human mind. If human kings had

reverence and sanctity in the eyes of their subjects, how much more would not these dread powers? And to think of them as kindly disposed to those who approached them in the right manner would bring delight and gratitude. Undoubtedly these powers had their plans and dispensations, their laws and their favorites.

It is a well-established fact of comparative religion that man's conception of the status and nature of his gods developed step by step with his own social and intellectual growth. There is an evolution of spirits to deities and of deities to a pantheon having a political and moral grouping. What more natural than that the arrangements in the spiritual world should reflect both accidental associations and the various political and social relations developed in the nation! Zeus, the king of the Greek gods, has his consort and his courtiers. Yahweh, the national god of the Hebrews, is a king who reigns in the sky. He is the Lord of Hosts.

Out of this interpretation of things with its belief in disembodied spirits and its faith in gods came the emphasis upon prayer and worship. Lifted to a higher level, it produced, logically enough, the notion of a plan or providence having a world sweep. *Social relations were thus extended to take in the unseen, but powerful, agencies which dominated the world and held man's fate in their grasp.* The ablest of the human minds of that day worked on these suggestions and implications and, with passionate faith, saw in the heavens the decrees which determined the course of events here below. The wide range and variety of all this, the infinite forms and gradations which these ideas took, can be appreciated only by the student of comparative religions. And yet there are common notes and recurrent motives. Man's needs and hopes were enough alike the world over to weave a similar pattern.

We who belong to the Hebrew-Greek tradition in these matters are well aware that our monotheism has reflected the political organization of its cultural development. To use Well's expression, God is the Heavenly King. Yahweh had

dominion and yet, thanks to the historical development of Israel and to the moral genius of the greater prophets, his dominion was thought of as moral. With Hosea came in the kindlier human note, which was to lead by degrees into the Christian proclamation that God pitieth man as a father pitieth his children.

This is a striking conception of the universe, and it appeals to all of us. There is the child in each of us, and the world appears at times so hostile and unfriendly. Is this impersonality of the universe an illusion? Is it governed in the light of values?

Is the Universe Friendly?—Let us remember that the philosopher is trying to understand his world in the light of all the knowledge and possibilities relevant to it. Is there good reason to believe that the universe has a unity akin to mind and purpose? Or is it a vast and loose system of the kind that astronomy describes? It is obvious that the question is a very serious and important one.

Historically, the roots of the idea of a superhuman power go deep down into the subsoil of early human attitudes and assumptions. Religion had its humble origin in fear, need, love, wonder, imagination. There was the sacred, the mysterious. Bit by bit, the gods arose as worshipped powers. Social group and individual adjusted their lives to these powers. Ritual and reflection interacted, and the centuries saw tribal religions become national and even ethnic. Like language and literature, religion is one of the great social developments. Few, if any, subjects are more interesting than the history of the various religions which have appeared in the world, in India, Arabia, Palestine, Greece.

The assumption back of our Western religions is in substance that the universe has a unity analogous to that of personality and that this unifying Centre and Soul of the universe is mindful of us who are His children. Clearly, this is a magnificent hypothesis. What evidence is there for it?

Skepticism in these matters reared its head with the in-

crease of knowledge and of reflection upon it. It must be admitted, however, that doubt was directed chiefly against the magical and the miraculous. Slowly the abler human minds began to conceive of the universe as one of order and law. In this fashion, the problem shifted. Once the divine meant the supernatural, the unusual, the desired and visible answer to petition, the abundant harvest or the victory in war. Now for more critical minds it meant a divine plan, something at the heart of the world making for righteousness.

Let us remember that the traditional religions have their revelations as sources of their faith that this idea is not a mere hypothesis. Philosophy has the secular and laic problem of reflecting on this religious view of the world in the light of the structure and nature of the world as revealed in the sciences. For it, the existence of a God must be looked upon as an hypothesis which deserves the utmost consideration.

To meet rising doubt philosophy and theology developed certain arguments which were designed to demonstrate the existence of a deity. These arguments were finally attacked by such men as Kant and Hume and are no longer regarded as cogent. It is worth our while to state them and to point out what objections to them have generally been accepted. We shall then show that the only vital question is this, What kind of a universe are we in? Is some Power working in it?

The first traditional argument appealed to in these matters was the cosmological argument. It argues from the need of a first cause of the physical universe and of human beings to a God as the only possible First Cause. The second argument was the teleological proof. It argues from design and order in the world to a superhuman designer. The third appeal is to the ontological argument. It will be remembered that Descartes rested his system upon this proof. It is the deduction of God's existence from the idea of God as a perfect being.

The first two arguments must be brought into relation with cosmology. Thus the cosmological proof assumes that the

universe is *contingent,* that is, that it is not self-sufficient existentially and must have a ground or cause. It is evident that this argument rests upon the belief that the world had to be created. But, in our examination of the category of time, we saw reason to discard this tradition. There is no obvious reason why we should hold that the universe did not always exist. Time, we said, is in the world as an order of events, and not the world in time. So far as we can see there is nothing contingent about energy. It seems to exist in its own right. Our task is to understand the structure of this spatio-temporal system of which we are a part rather than to think mythologically about a hypothetical origin. And we know too much about the history of Hebrew cosmogony to take it as other than Semitic mythology.

The argument from design had more logical force in the days before Newton, La Place and Darwin. These and those who have come after them have succeeded in showing that a certain measure of order and organization is intrinsic to nature. Why should it not be? But we must not exaggerate the amount of order in the world. There is devolution as well as evolution. The essential point is that we *now* think of *order in nature as a growth and an adjustment rather than as something made on purpose as a machine is made by an artisan.* The older tradition seems to us very anthropomorphic.

There remains the ontological argument. This has been, when all is said, the favorite argument of apologetics. It cannot be understood apart from Platonic realism which thinks of ideas as eternal realities above the world of appearance and illusion. In essentials the argument is this: The idea of God is the idea of a perfect being. But a non-existent being cannot be perfect to the degree that an existent being is since it lacks the attribute of being. Hence our idea of God implies his existence.

In this argument we are supposed to pass from idea to existence. But, as both Hume and Kant pointed out, we

cannot regard existence as a predicate of the same type as perfection. When there is question of the existence or non-existence of an object of thought, we must seek some proof which connects it with the system of objects to which we ordinarily grant existence. To say that a thing exists is either to place it within the spatio-temporal complex of objects to which we are constantly responding or else to connect it with them in some fairly comprehensible and known fashion.

Philosophy of religion has fairly well adjusted itself to the unsatisfactoriness of these traditional arguments. C. C. J. Webb, an English writer on philosophy of religion, asserts that the question is not so much whether God exists as what God is. This seems to me an excellent way of putting the problem. The essential human problem is this, *What kind of a world are we in? Is it a friendly universe?*

Here, again, let us frankly point out that different philosophical positions have different implications. It is quite obvious that the idealist who looks upon the physical world as phenomenal finds it easier to give an affirmative answer to this question than does the physical realist. But we must not forget that he does not, and cannot, change the essential facts of human life by this distinction.

It is obvious that we have no right to be dogmatic in this tremendously important and difficult subject. There seem to be three main currents of thought in these matters which we may call the theistic, the absolutistic, and the naturalistic. For the theistic view, God is the creator of the world and somehow includes it in his power and activity; for the absolutistic form of idealism, the universe is itself a unified system dominated by mind and values; for the naturalistic, the universe is a tremendous spatio-temporal system of which we human beings are a localized and evolved part with our desires, activities, and adjustments.

In this connection, it may be well to quote from a recent, realistic writer who has a position very similar in certain

respects to evolutionary naturalism and yet believes that the traditional idea of God can be in large measure retained. I do this all the more gladly that I want the student to realize that we are here dealing with ultimate questions with an open mind.

"In the religious emotion," writes S. Alexander, "we have the direct experience of something higher than ourselves which we call God, which is not presented through the ways of sense but through this emotion. The emotion is our going out or endeavor or striving towards this object. Speculation enables us to say wherein the divine quality consists, and that it is an empirical quality, the next in the series which the very nature of Time compels us to postulate, though we cannot tell what it is like. But besides assuring us of the place of the divine quality in the world, speculation has also to ask wherein this quality resides. What is the being which possesses deity? Our answer is to be a philosophical one; we are not concerned with the various forms which the conception of God has assumed in earlier or later religions. . . . God is the whole world as possessing the quality of deity. Of such a being the whole world is the 'body' and deity is the 'mind.' . . . As an actual existent, God is the infinite world with its nisus towards deity, or, to adapt a phrase of Leibniz, as big or in travail with deity."[1]

Let us frankly admit that this conception of deity is not that of popular theology with its demand for the satisfactions of emotional needs. But, then, the bigger theologians have always qualified this popular notion. They have realized that special providences have hardly consorted with an ordered universe or with divine foreknowledge.

But I cannot forego pointing out that even strict naturalism has a place for religion if we mean by religion the concern for values. Is not human life an adventure in the creation and furtherance of human values? Man is becoming more active in these matters and less acquiescent. Do we not have

[1] S. Alexander, *Space, Time and Deity*, vol. 2, p. 352.

an emotional sense of human life, of its joys and sorrows, its littlenesses and its greatnesses?

May I in this connection quote from a work of mine in which I tried to show that religion can be weaned from the supernatural and stand for social and personal loyalty to the tested values of life? "The religion of the future will increasingly be concerned with two things, virtues and values. The Greek virtues have been made tenderer by the Christian virtues and more steadfast by that training of the will and character which we associate with puritanism. The experience of the ages has deepened and broadened man, made him less hasty in judgment, more aware of his limitations, more realistic, more efficient. At the same time, it has added that touch of pathos which spiritualizes the beauty of life. We believe, also, that it has nourished that sentiment of tenderness for the homely fate of the average man that will some day find expression in a fuller democracy than has yet dawned upon the earth. But, above all, religion must be catholic in its count of values. Wherever there is loyal and intelligent endeavor, it will acknowledge the presence of the spiritual. It will reverence the philosopher who has found salvation in the solution of complex intellectual problems, the scientist who has given himself to the whole-hearted study of nature, the missionary who has devoted himself to the spread of an elevating conception of life, the kindly physician who has sought to alleviate human suffering, the social reformer who has spent his life in agitating for a saner social policy, the artist who has had a vision of beauty and has labored to express it in such a way that all men could share it, the man and woman who have met the tasks of every day with courage and charity."[1]

Fate and Freedom.—By its very nature, philosophy is rich in problems. And such problems are not irritating puzzles but rather inexhaustible topics for thought. They open up vistas for reflection. Even a study of what people

[1] Sellars, *The Next Step in Religion*, p. 222.

have thought in the past is attractive. Fate, predestination, determinism, possibility, potentiality, freedom, what a history these terms have had! What I shall try to do in conclusion is to indicate the proper way of approach to these topics. Students should have symposia on subjects like these in order to develop mental range and power.

Let us take the idea of fate as an example.

Fatalism assumes that some decree or Will has control of events so that they arrive in a certain order and inevitably. It was this kind of fatalism which dominated Greek dramatic thought and still dominates Islam. What would be the attitude of the philosopher to such a theory? I think that his reply must be (1) that there is no evidence for such a theory, and (2) that he does not see how such a decree could become effective. Is there not here an analogy with a monarchical system in society? Predestination would seem to have a similar context.

But is it in any sense correct to say that a man has a fate? Do not Hardy's characters have little control over their life and so have a fate? The term fate stands for a very real aspect of human life. It means that the individual is buffeted about by circumstances and environment. He is a part of a very large whole. Thus we may speak of man's *general fate* as his actual inherited nature and the kind of a universe in which he is. It is man's fate to be born, to need food and water, warmth, love, to live a few decades and then to die. In this sense, everything which exists has its fate. Its general lines are set for it.

And then there is the *specific fate* of an individual, which means his career as determined by capacities and circumstances, the way in which the world impinges upon him. What a variety this makes possible. Biography is interesting from this standpoint.

But we soon note that this kind of fate does not exclude man's activity. He reacts to his fate, to his surrounding environment. Fatalism would mean an attitude of passivity

to fate, a denial of selective control, of significant choice. But is it not the case that the vigorous and intelligent individual is in a surprising measure master of his fate? There are obvious degrees here. And we must sense this interaction of fate and response, of circumstance and choices in the light of valuations. Thus does life move in its zigzag course. It is simply the case of organism and environment at a high level. And the organism is a complex of endeavors. In human life, these become values, objectives.

And this brings me to the concept of freedom and its companion, responsibility. Both of these concepts are fascinating.

We must, first of all, free them from their theological setting. A soul was thought of as a naked reality having an innate power of decision, or faculty of will, and gifted with a knowledge of right and wrong. Because of these gifts, it was responsible. If it freely, that is, without compulsion from outside, chose what was wrong, it committed a sin and must expect to be punished by its creator.

To a modern all this sounds abstract and artificial. We want to know what the will is, what the nature of a moral decision is, whether there is any assured knowledge of right and wrong as commands of a sovereign master. Was not this whole view schematic and legalistic? There is no psychology or sociology in it. Was it not the simple transfer to a heavenly lord of the external relations between an earthly subject and his master, say, a feudal baron? But the student can trace out the inadequacies of such a view.

Let us in this connection recall the modern theory of punishment and of responsibility. People are *held responsible* if we believe that they have the capacity to control their actions in the light of moral values. It follows that they can be given social freedom with the reasonable expectation that they will fit into society. And punishment, though complex in its motivation, is not a mere matter of revenge. It connects up with the desire to control and conserve.

The years of controversy which have raged around the question of free-will have clarified many matters. We now realize that the setting of the question has shifted. At first the problem was whether the will was free from the control of deity. The opposite position was predestination. But was not this the theological expression of the conflict between absolutism and relative pluralism, between centralization and decentralization? We soon realize that the context of the problem has profoundly shifted. The query now is the individual's freedom from nature. "If," he says, "I am a *product* of my heredity and my environment, how can I be free or responsible for my actions"? How often have I heard students propound this query (!)

It seems to me clear that this question represents the awakening to the impossibility of the naked-soul conception of personality and selfhood. What are we? Concrete persons who are growths in nature at the social level. Each individual is a distinct growth from the roots of heredity and environment. But we must be careful here and keep our sense of internal choice and valuations. Here we are on the inside of reality. Simply to say that the self is a product suggests that it is a sort of impersonal and mechanical resultant of certain forces and that consciousness is an epiphenomenon which contains a helpless spectator who feels himself carried on down the stream of events but is unable to interfere. Even to say that the self is a growth is apt to be misleading for the conscious self is again thought of as a spectator rather than as a participant in the growth.

The point to realize is that an individual *is* his personality and that his will, desires and values are intrinsic to that personality. When we rebel against heredity, that means that we wish we had better capacities and, perhaps, better health. When we rebel against environment, that means that we wish that we had had better opportunities. And both wishes are at once natural and futile. We are up against what I called our specific fates. But, it will be remembered

that I asserted that such a specific fate did not rob us of our capacity to select and create along the lines of possibility which our nature and circumstances indicated. It is I who choose to do this rather than that. I chose it, because I desire it and believe it desirable. Only external constraint can rob me of this active and courageous choice which gives zest to my life. My conscious self is not something which merely witnesses the play of physical and organic forces as in a dream. Instead, it is felt as a very centre and focus of choice. And I believe that this feeling is valid. I want something intensely and do my level best to get it.

Is it surprising that people are puzzled by this problem when we remember that we have in our minds the traditions of theology, the traditions of dualism, and the traditions of epiphenomenalism? Man still thinks of nature as something alien and hostile and external. Rather should he think of himself as a highly integrated kind of thing which exists in nature and *which intends to get its good by intelligent conduct.* We must start where unconscious forces carried us; we do have our fate as explained above; but we do have our degree of freedom, of self-expression.

Let us conclude this brief discussion of the free-will controversy by returning to the protest which, as I said, the teacher of philosophy so often hears: If I am a product of my heredity and my environment, how can I be held free or responsible for my actions?

We saw that the truth of the antecedent lay in its recognition that the self does not create itself out of whole cloth. Heredity and environment, theology might say, is the way in which God forms the self. What would you have? You would need to be a self to create your self as you wanted it to be. And the self as you wanted it to be would be another self not necessarily grateful for your work. Or if the self just sprang into being, you would be no better off, for you would have to accept this self of mere chance. Let us now look at the consequence of our proposition.

Why cannot I be held free? Take me at any moment and I am free in so far as I can carry out my plans. I am not free, of course, to be any kind of a self which presupposes capacities which I do not possess. We must not have absurd ideas of freedom. And I am responsible for my actions if they are my actions and chosen by me. In fact, as we have tried to show, that is all that responsibility means. Society holds those answerable for their actions who have certain capacities which normal people possess. It would be foolish for society to make demands which pass the limits of a man's capacities. Thus society may be foolish in expecting that simple-minded persons can adjust themselves to our complex industrial conditions. They may need aid and guidance. There is, again, such a thing as being too ambitious, making too great demands upon oneself. A fair level of intelligent activity is usually best for the individual.

Many other questions have been raised and discussed by philosophy. But it would require a treatise too large for an elementary course to explain and analyze them. What we have desired to do is to suggest the basic problems and to indicate the best methods of attack upon them. While my own point of view has necessarily dominated the discussions, I have sought to avoid dogmatism. If there is one thought more than others which I wish to stress in this last division of our subject it is this, that man has in him the power to admire and create values and thus to establish himself on a high level of living.

Human life has in it great possibilities; and organized society should see to it that, so far as possible, all should have a chance to understand, to participate and enjoy. Life demands, however, a certain strength of soul, a share of adventurous courage, and even a touch of humor. And there are veritable tragedies which must be recognized as such. Nevertheless, life is by the vast majority recognized to be good. In the controversy over the good of life, I would be neither a bland optimist nor a morbid pessimist, but a pluralistic

realist with a will to improve the possibilities of life in a democratic and yet intelligent way.

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QUESTIONS AND PROBLEMS

CHAPTER I

1. Why must a definition of philosophy be very general and stress a certain kind of attitude?
2. What appears to be the chief difference between philosophy and religion? between philosophy and any special science?
3. What does the scientific movement represent in your eyes? What are some of its characteristic methods?
4. Are there good and bad kinds of speculation? Can science get along without speculation? Would you call scientific theory speculation?
5. Indicate the kind of training that makes for competency in philosophy.
6. Is philosophy a kind of wisdom about life? Or is it insight into the nature of things?
7. Does philosophy have a method of its own?
8. Why are logic and psychology apt to be central in the philosopher's training?
9. Name some scientists who seem to you to be philosophers also.
10. Why does the history of human thought bulk so large in philosophy?

CHAPTER II

1. What did the Greeks contribute to the world?
2. How would you describe the attitude of theoretical curiosity? Is there anything corresponding to it in savage life?
3. Why should the individual sit at the feet of the great thinkers of the past?
4. How would you distinguish between mythology and philosophy? Do we still have our popular mythology?
5. Show that intellectual division of labor was as natural as physical division of labor.
6. What was the weakness of medieval philosophy?
7. Why have philosophy and science had quarrels? Do you think that it was always the fault of philosophy?

8. Give the main divisions of philosophy.

9. What is logic? What is theory of knowledge or epistemology?

10. What is your present idea of the aim of ontology or metaphysics? Do you think that such an investigation can be escaped by the human mind?

11. Show that, in cosmology, science and philosophy should be in close cooperation.

12. Why do we class ethics and æsthetics under axiology or theory of value?

13. Is common sense a fixed, or a changing, outlook?

CHAPTER III

1. Try to discover the outlook on the world your companions have.

2. Describe the main features of common-sense, or natural, realism. What would you call a thing?

3. What ambiguity are there in the words, *see* and *look at*?

4. Has natural realism been recognized in the history of philosophy?

5. Does natural realism deserve to be called a system? Can you point out any gaps in it?

6. Why should philosophy stress perception as a starting-point?

7. Does there seem to you to be a conflict between science and natural realism?

8. Would there be any sound in a forest when a tree fell if there were no ears to hear? And how about color if there were no eyes?

9. If chairs and tables are perceivable objects are atoms also? What do you mean by perceivable here?

CHAPTER IV

1. State some facts which conflict with the view that you see things just as they are.

2. Is common sense very much aware of the mechanism of perception?

3. Does an object seen in a mirror exist out there? Discuss.

4. Examine carefully each of the main objections advanced in this chapter against natural realism.

5. Distinguish between the characters, such as color, shape, size and weight you discriminate and the thing you perceive. Is the thing more than these characters?

6. Does the breakdown of natural realism imply idealism?

7. Do you think that the appearances of things may be a partial revelation of them?

8. Is there any standard position from which we can see the thing and not its appearance?

9. Does measurement give you knowledge that perception alone cannot?

10. What is the psycho-physiological theory of perception? Does it deal with the mechanism of perception? Does it refute the claim to perceive things?

CHAPTER V

1. What are the chief values of an historical approach?

2. Why did Descartes adopt the method of doubt? Was his doubt extreme?

3. What kind of a self did Descartes mean by his "I think, therefore, I am"?

4. Did he really discover a thinking substance?

5. How would you distinguish between the perceived sun and the real, astronomical sun?

6. What was the Cartesian test of truth? Does it seem to you adequate? Does it follow from his kind of rationalism?

7. How did Descartes get to the physical world? What effect was this indirect relation to the physical world likely to have?

8. Do your concepts seem to you to be built up gradually from perceptual material? Was this Descartes's view?

9. What are "ideas" for Locke?

10. Do ideas of this kind or do beliefs seem to you to be units of thought?

11. What was the weakness of the copy-theory as formulated by Locke? Did it assume that we know ideas first and things afterwards?

12. What did Locke mean by material substance? Is this what the scientist means by matter?

13. Distinguish between primary and secondary qualities.

CHAPTER VI

1. Why is the term idealism ambiguous? Is idealism in conduct the same as idealism in theory of knowledge?

2. Explain Berkeley's principle, *to be is to be perceived.*

3. What are the two stages in Berkeley's argument?

4. Does the physical world seem to you to be *inferred* from ideas or *affirmed* in perception?

5. What do you think that Berkeley had in mind when he said that an idea can be like nothing but another idea? Was an idea for him a kind of mental entity?

6. Would you agree with Locke and Newton that matter is inert?

7. How does Berkeley use this view of matter to refute physical realism?

8. Show that Berkeley's criticism of Locke's view of substance was an intellectual advance.

9. State Berkeley's construction. On what principles was it founded?

10. Can you refute Berkeley by kicking an object as Dr. Johnson is said to have done?

11. Where was Berkeley credulous?

CHAPTER VII

1. Should we expect skepticism to arise at this point?

2. What do you understand by phenomenalism? Oppose it to the two-substance view of Descartes.

3. Why can Hume's position also be called psychologism?

4. On what points did Hume tend to agree with Berkeley? Where did he differ?

5. Do you agree with Hume's analysis of the self? Against what was it directed?

6. Why is Hume's analysis of causation classical? Against what view was it directed? Can you find anything like it in Berkeley?

7. How did Hume test ideas like spirit, soul, substance, power? Does this follow from psychologism?

8. Would you expect a revolt against Hume's negative results? Who in Scotland began such a revolt? Could he go back to Locke?

CHAPTER VIII

1. What kind of training did Kant bring to philosophy?

2. Show the influence of Descartes in Kant's thought.

3. What concession did Kant make to British empiricism?

4. How did Kant seek to bring sense and reason together?

5. What do you understand by the manifold of sense? by the forms of space and time? by the categories of the understanding? Which of these are *a posteriori* and which are *a priori?*

6. Show that Kant's position shows structural analysis along with inherited theories.

7. What do we know according to Kant? Do these phenomena exist only in human experience?

8. What is the thing-in-itself? Can it be called the ghost of the physical thing?

9. Must Kant be called an agnostic realist? What are physical things for Kant?

10. What two kinds of knowledge can you distinguish?

11. If categories are contributed by an isolated self, can they have any meaning for an external world? Was not Kant, then, quite logical?

12. Can you suggest another origin for the categories?

13. Show that objective idealism was built largely upon Kant's results.

14. In what fields did the objective idealist do his best work?

CHAPTER IX

1. Explain some of the significant points suggested by this survey.

2. Do you have a deeper sense of the problems confronting philosophy?

3. Do you think that Cartesian dualism was historically inevitable? Did it mislead philosophy in any measure?

4. Why is an empirical survey of consciousness and the knowledge-claim desirable?

5. What references, structures and distinctions can you find in consciousness?

6. Why does the temporal dimension of consciousness work against natural realism?

7. Do the references and contrasts of the coexistential dimension favor realism? Interpret such terms as aware of, conscious of, contemplate, minding.

8. What is meant by cognitive relation? Does it mean anything more than knowing?

9. Examine the distinction between thing and idea.

10. Have ideas, characters or predicates the same nature as the objects which we seem to know by means of them? When I say that a stone is heavy, can I also say that my *idea* of the stone is heavy? Are ideas in knowing empirically given? Is the object given in the same way?

11. Can you think of knowing apart from consciousness?

CHAPTER X

1. Why should we start with the organism instead of with an isolated mind?
2. Show that both stimulus and interpretative response are parts of the total process of perceiving.
3. Point out by means of examples that the whole organism *selects* objects of perception.
4. Why should we seek to combine the objective, scientific viewpoint with the introspective one in seeking to understand perception?
5. Does knowing seem to you a literal apprehension of an object or an interpretation of an object?
6. What factors can you distinguish in the knowing-situation?
7. Show that in logical ideas we are *within* the complete act of knowing. That is, that we have selected an object and are interpreting it in terms of discriminated characters.
8. What has the psychologist meant by ideas?
9. Contrast the present position with the Cartesian tradition.
10. Does it seem to you that we decipher the pattern and quantitative aspects of the world? Does this view harmonize with the results of science?
11. Must knowing a thing fall short of being it?
12. Does this view seem to you in any sense agnostic? Or is it an account of the nature and reach of knowledge?
13. Do we literally share the contents of other minds? Why can you say both yes and no to this?

CHAPTER XI

1. What is your present understanding of the task of epistemology?
2. Show that knowing is a complicated natural event which the special sciences must take for granted.
3. Why are idealism and realism so strongly opposed to one another?
4. Connect the various forms of experientialism with the history of philosophy.
5. Does subjective idealism come dangerously near solipsism?
6. Explain the basic thesis of objective idealism.
7. Why is it said that objective idealism has an organic logic? Explain the logical theory of internal relations.
8. Give the names of some famous idealistic thinkers.

9. What is positivism? Is it anti-metaphysical?
10. In what respects is Neo-Kantianism opposed to speculative idealism?
11. Why is pragmatism regarded by many as a typical American philosophy?
12. Explain the use of the following terms as applied to pragmatism: experimental, temporalistic, utilitarian.
13. State the axiom of realism.
14. Do you think that neo-realism is nearer natural realism than is critical realism?
15. Do you think that pragmatism, neo-realism and critical realism have many points in common?

CHAPTER XII

1. Can feeling be said to be either true or false?
2. Show the intimate connection between judgment and truth.
3. Distinguish between the meaning of trueness and the criteria used to test trueness.
4. Explain the coherence theory of truth. Show how it is an integral part of objective idealism.
5. Point out the essential features of pragmatism's theory of truth.
6. Why does Dewey put truly in place of trueness?
7. What principles in regard to truth do neo-realism and critical realism have in common?
8. Explain the view that, in knowledge, the content is in some sense identical with the characteristics of object known.
9. Why can this be called alternately a correspondence and an identity view?
10. What would be some of the criteria for such a meaning of truth?
11. Why has neo-realism difficulty in accounting for error?

CHAPTER XIII

1. Name some of the typical problems of ontology or metaphysics.
2. Why does cosmology with its close cooperation with science control ontological speculation?
3. Show that one's epistemology is bound to affect one's ontology.
4. Which is the more interesting to the majority, epistemology or cosmology?

5. What are some of the inherited sharp contrasts of present-day thought?

6. Show that philosophy has been moving from abstract deductive systems to an analytic survey of the world as known.

CHAPTER XIV

1. Why are materialism and spiritualism called monisms of substance?

2. What has been the weakness of traditional materialism?

3. Have recent changes in epistemology affected the situation?

4. What is meant by saying that consciousness is a by-product of brain-events?

5. Does such a view rob mind of its efficacy in conduct?

6. Is it meaningful to call consciousness a form of motion?

7. Name some of the representatives of materialism in the history of thought.

8. Would it be fair to say that traditional materialism was a part of the mechanical theory of nature?

9. In what respects is spiritualism the opposite of materialism?

10. Does spiritualism depend upon idealistic epistemology?

11. What does Bergson seem to you to mean by intuition?

12. What is panpsychism? monadism?

13. If you had to choose between mechanical materialism and spiritualism which would you select?

CHAPTER XV

1. Does the strength of dualism seem to you to lie partly in the stale-mate between materialism and spiritualism?

2. Show that dualism has been a constant element in Western thought.

3. Is our knowledge of the physical world as intuitive and penetrating as Descartes thought?

4. Explain some of the technical motives in favor of dualism.

5. Do you think that the growth of biology and psychology as natural sciences has affected the situation?

6. What does Pratt mean by dualism of process?

7. Do you think that animism still underlies the tendency toward dualism?

8. Outline the more forceful objections to dualism.

9. Show that it is the mind-body problem that ontology is really dealing with in controversies about dualism.

10. What do you understand by the term evolutionary naturalism?
11. What are some of the pressing conditions it must fulfil to be satisfactory?
12. Do the sciences of objective observation have their necessary limits?
13. Does it seem to you that psychology is in many ways a unique science? What do you understand by introspection?
14. Is another person's consciousness observable? Is there communication elsewhere in nature?

CHAPTER XVI

1. Is there good reason to believe that reality has basic characteristics?
2. What would seem to be the relation between these basic characteristics and the categories of human thought?
3. Contrast this view with Kantianism.
4. Show that there are levels in spatial experience.
5. Are mathematical elements, like points and lines, constructions?
6. What is meant by non-Euclidian geometry?
7. Must we discover by hard work the spatial character of nature?
8. Distinguish between the essence, the receptacle, and the relativity view of space.
9. Is the physical world necessarily infinitely divisible because mathematical space is?
10. May the world be spatial even though we do not know whether it is finite or infinite?
11. What does the term infinite mean to you?
12. What is your understanding of a complete void?
13. Interpret the following terms: unity, plurality, aggregate, order, correspondence.

CHAPTER XVII

1. Does change in the world imply a complete flux?
2. What do you understand by Eleaticism? by temporalism?
3. Describe the 'specious present.'
4. Compare the 'now' and the 'here.'
5. Do events seem to you ever to overlap?
6. Can you think of events apart from things?
7. What do you understand by duration? Is it measurable?
8. Show that the mind is in some sense more comprehensive than

existence. Do you think that the past exists? If it does not exist, how can it be known?

9. Can you think of time apart from change?

10. What are some of the assumptions underlying the idea of creation?

11. Show that the ultimate puzzle is that anything is.

12. Can things change and yet be in any sense the same? Apply to human individuals.

13. What is your understanding of the relativity theory?

CHAPTER XVIII

1. Does matter mean material things or an elementary stuff?

2. Distinguish between the old speculative theories of matter and recent experimental theories. Did one prepare the way for the other?

3. May there be something more ultimate than matter? How about ether and electricity?

4. Is energy merely a measurable quantity connected with work?

5. Point out the generic traits of thinghood.

6. Is it possible to reinterpret primary qualities as characteristics of things revealed in perception and thought?

7. Why does the scientist tend to look upon color as a psychological event? Why not geometrical shape?

8. Does such a view imply Cartesian dualism as Whitehead maintains?

9. Can physical things be called substances?

10. Distinguish between constant characteristics of physical things and variable characteristics. Which of these two is evolution interested in?

11. What do you understand by chemical properties? by biological properties?

CHAPTER XIX

1. Show that dialectical controversies often start with rigid concepts. Apply this principle to the origin of life.

2. Do living things accumulate their past?

3. Distinguish between design and chance. Is all that is not designed chance?

4. Why was Darwinism epoch-making?

5. Do you know of any recent advances in regard to the method of evolution?

6. Show that function and structure go together. Does this fact have any bearing upon life?

7. What is meant by the labile equilibrium of protoplasm?

8. Distinguish different ideas of abiogenesis.

9. What are the three hypotheses as to the origin of life which have engaged attention? Which one seems to you most suggestive for investigation?

10. What is Moore's "Law of Complexity"?

11. Is the term, the mechanical view of life, ambiguous?

12. What is your understanding of vitalism? Is it dualistic?

13. Is a third position between traditional mechanism and vitalism possible? Can you suggest a name for it?

14. Is the cure of science more science?

CHAPTER XX

1. Is the problem of mind analogous to the problem of life? What are the differences?

2. Why is an historical survey of past theories of mind valuable?

3. What is animism? Was there a stage before animism? Have you heard of such terms as animatism and mana?

4. What was the outlook of Democritus? Of Epicurus?

5. In what direction was the influence of Plato exerted? Show how Neo-Platonism carried immaterialism farther.

6. Did Aristotle think of the soul as separable from the body?

7. Where did Descartes locate his inextended substance? Is there a contradiction in the very effort?

8. Explain the gradual substitution of terms like consciousness and mind for soul in psychology.

9. Do you know anything about the Freudian conception of the self? What are complexes?

10. What is mind for behaviorism? Do you know what a conditioned reflex is?

11. Does mind seem to you to be a somewhat different term than consciousness? How would you distinguish them?

CHAPTER XXI

1. Why is the situation in psychology so unstable at present? Was this to be expected?

2. Is science necessarily limited to what can be observed externally?

3. What was the classic tradition in psychology? Can it be linked with dualism?

4. What do you understand by behaviorism? What are its assumptions?

5. Is there any reason why the results of introspection may not harmonize with and supplement the external method?

6. Has behaviorism as yet a fixed meaning?

7. Does all this mean that we are trying to see the organism as the unit for psychology?

8. Do you think that epistemology can assist in giving perspective in this matter?

9. Criticize the inclusive definition of psychology suggested.

10. Do you think that psychology is a natural science?

CHAPTER XXII

1. What is your understanding of the mind-body problem? Do you think that we have different meanings for both these terms today from those held a generation ago?

2. Why must we distinguish sharply between dualistic and monistic solutions of the mind-body problem?

3. Do you think that much depends upon the solution of the mind-body problem? For instance?

4. What does interactionism stress? What are its weaknesses?

5. Is the denial of a causal relation basic for traditional parallelism?

6. Why does parallelism tend to lapse into epiphenomenalism?

7. What kind of epistemology underlies psychical monism? Do you recall panpsychism?

8. Does consciousness seem to you a stuff, or a qualitative complex of events intrinsic to a system?

9. Explain the double-aspect theory? What are its weaknesses?

10. Does the double-knowledge theory seem to you to improve upon the double-aspect theory?

11. Must science frankly recognize mind and consciousness as facts?

CHAPTER XXIII

1. What science expresses the growing sense of the naturalness of society?

2. Why is the primitive group so suggestive for study?

3. Can we apply the principle of unplanned growth to social groups?

4. Show the dependence of social groups upon language.

5. What do you understand by culture? by culture-contacts?

6. Why must society be considered a new kind of thing?

7. In what sense, if any, has society a mind?

8. What are some of the conditions of public opinion?

9. Are arts, industries and forms of religion growths?

10. How does the group into which he is born affect the individual? Give an illustration.

11. What do you understand by human nature? Does it change?

12. What is the error of extreme individualism? of extreme collectivism?

CHAPTER XXIV

1. What do you understand by the doctrine of levels? Is this what is sometimes called emergent evolution?

2. Explain the possibility of genetic continuity and logical discontinuity in nature.

3. What do you understand by a law of nature? Do laws rule things?

4. Is nature in your opinion homogeneous or heterogeneous? Does this mean pluralism and a measure of free play among the parts?

5. Why should we distrust simple formulæ in science?

6. Is design a human method? Should we extend it beyond ourselves?

7. Explain the nature of the Platonic-Aristotelian teleology. Did it pass into religious thought?

8. Why was Darwinism revolutionary?

9. Are the laws of nature statistically determined or do they agree with the strict laws of mechanics?

10. What does the phrase, "Time packs space," mean to you?

11. What does internal teleology mean to you? Do human purposes seem to be forces in the world?

12. What does Lloyd Morgan mean by *nisus?* Would it seem enough to say that systems have trends characteristic of their energies and organization?

14. In what sense may we hold consciousness to be efficacious? Must mind lie back of consciousness?

15. Is there reason to hold that there are levels of causality in nature?

CHAPTER XXV

1. Contrast contemplation of the world with active participation or doing and suffering.
2. Show that instinct, desire and feeling are at the foundation of participation.
3. Do you think that different individuals and different social groups have distinct scales of value? Illustrate.
4. Would you take Goethe's Faust as a symbol of a conflict in values?
5. In what respects has our view of the cosmos been altered since Medieval times?
6. What criticisms would you pass on the eloquent passage from Balfour?

CHAPTER XXVI

1. Define ethics.
2. State some typical ethical problems.
3. Give examples of moral categories.
4. What is meant by a moral situation as against a merely practical one?
5. What are some of the causes of the recurrence of ethical subjectivism or relativism?
6. Explain some of the methods used in ethics.
7. Contrast intuitionalism in ethics with experimentalism.
8. What is meant by hedonism? What can be said in its favor? What against?
9. Does temperament affect one's morality? Consider puritanism in this regard. Does one's cultural background affect it?
10. Contrast "human good" and "duty" as starting-points in morality.
11. Why does ethics lead to an investigation of the nature of value?

CHAPTER XXVII

1. Recall a case of "conscience" and analyze it.
2. Would you say that moral insight replaced custom?
3. Contrast the formation of scientific judgments with the growth of moral judgments.
4. Is the sense of duty largely the feeling of what we ought not to do?
5. What did Kant mean by the categorical imperative?

6. What are the shortcomings of conventional morality?
7. Is the zealous moral reformer in danger of narrowness?
8. Do you think that one person has the right to dictate to another in matters of morals?
9. Is there danger of moral bigotry just as there is of religious bigotry?
10. Do you think that we are outgrowing supernatural sanctions?
11. Analyze the idea of responsibility. Why are not insane people regarded as responsible?
12. What is the ethical basis of punishment?

CHAPTER XXVIII

1. Show that values are central in both personal and social life.
2. Is democracy a matter of valuation?
3. Do values change from age to age? Give examples.
4. What do you understand by transcendentalism in values? by humanism?
5. Is the cognition of an object different from its valuation?
6. Can you value an object without knowing it?
7. Do objects acquire value-meanings as well as cognitional meanings? Is there any sense in which such values are objective?
8. What is meant by the "Back to Plato" movement in values? Is it separable from idealism in cosmology?
9. Explain G. E. Moore's theory of good. How would you criticize it?

CHAPTER XXIX

1. How does the artist transform the things and events of everyday life into objects of beauty? Give some examples in both literature and painting.
2. What is an objective? Illustrate in education.
3. Does the artist seek to reproduce nature or does he express himself in form and color?
4. Take the classes of value suggested in the text and give examples of each class.
5. What are some of the values operative in a university?
6. What is the fault in what is called commercialism?
7. Show how the values dominating the life of a group control the lives of the members.
8. Distinguish between conventional values and living values.

9. How would you distinguish between a value-experience and a value-judgment?

10. Does reflection and further experience change a value-experience?

11. What are the arguments advanced by those who believe in absolute and eternal values?

CHAPTER XXX

1. Why must one's outlook upon the world be a matter of slow growth?

2. Point out some of the difficulties confronting psychical research.

3. Do Leuba's statistics seem to show that traditional beliefs are waning?

4. How do you account for the appearance of fundamentalism?

5. Do people differ in their desire for immortality?

6. Do you think that people brought up without a belief in immortality would have the same kind of desire as those who have been encouraged to have the belief?

7. Do you think that naturalists have much the same moral ideals as supernaturalists?

8. Do you agree with Leuba that ecclesiastical organizations have slowed down scientific progress? What positive contribution have they made?

9. Contrast the old and the new naturalism.

10. Has human life intrinsic meaning?

11. Analyze the traditional proofs for a deity.

12. Can the universe be called God?

13. What do you understand by fate? by fatalism?

14. Show that man has a measure of freedom and social responsibility.

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